

MEMORANDUM

DATE: 6/20/2012
TO: Eva Smith, Director of IT; Vic Portolese, Manager of IT
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SUBJECT: LSC SYSTEM REQUIREMENTS DOCUMENT

Attached is the System Requirements Document that our CIS 298 Special Project Team has created for the Learning Support Center Student Usage Tracking System. It includes an analysis of the current information system (AS-IS), an overview of the proposed system (TO-BE), an investigation of potential alternative solutions, and a recommendation sections. We will look forward to discussing this with you at our meeting tomorrow afternoon, 6/20, at 4:00 p.m.

**EDMONDS COMMUNITY COLLEGE
LEARNING SUPPORT CENTER**

System Requirements Document

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MANAGEMENT SUMMARY

The IT Department's CIS 298 Special Project Team has prepared a detailed and comprehensive Systems Requirement Document for your review. The problem driving this project stems from the large amount of time needed to register new students requesting services and then tracking each of their subsequent visits for those services. The following document examines each step undertaken during this process. This project grew out of a request by the Learning Support Center (LSC) and EdCC IT Department for an automated system to replace the current system used to track student usage of LSC tutoring services.

Our team began our investigation by examining and analyzing the current system tracking processes of not only the LSC but Services for Students with Disabilities (SSD), START, Counseling, and Testing centers as well. This included interviews with the various managers and supervisors from each area. We identified the primary stakeholders that interact with the LSC system as LSC support staff and the students seeking tutoring assistance. We looked closely at the current procedures and determined which transactions are taking place. We found that the current system was taking an inordinate amount of time to process student intake and visitation information. It is inefficient and time consuming, requiring a large amount of manual data entry and time to tally the daily sign-in sheets.

We also examined LSC source input documents including the "Assistance Request" (quarterly intake form) and "Student Daily Sign-In" forms as well as output queries and the LSC quarterly newsletter. We then looked at the current technology and found the LSC uses hardware consisting of PCs with accompanying external peripheral accessories such as printers, as well as Microsoft Office Professional 2010 and Windows 7 rounding out the installed software. Next, our team reviewed the strengths and weaknesses – problems now existing, and found that the time needed to tally and complete current data entry needs has become a burden on the LSC employees, robbing them of time that could be better spend supporting actual student tutoring.

At this point, we set about the task of investigating the requirements of a new system. We first identified the project scope, and determined that it

would encompass information about EdCC departments, courses, degrees, programs, users of LSC tutoring services, and visits for LSC tutoring services. We then determined the primary objective the new system should achieve would be to provide an automated logging and tracking system for student usage at the LSC using a card-swipe system. Minimizing the amount of time managing these processes and automating calculations of student usage, hours, and visits is also an important objective of the new system. Among the benefits this would provide include increased time to focus on student tutoring, a higher level of visit tracking accuracy through automatic time-capture, less errors in tallying visit data through automated system processing, and better ability to determine student usage of the LSC.

Subsequently, we examined the functional requirements that the new system must be able to perform to support the current business processes, and we created process models of the proposed system, including a Use Case Diagram and set of Use Case Scenarios. In addition, we created a Swimlane Diagram and related pseudocode to visually document and depict the activities involved in obtaining LSC services. We then identified the data requirements for the new system and created an Entity Relationship Diagram depicting the relationships between each entity and the attributes that describe them. In addition, we built a Metadata Dictionary defining the properties of those objects and the referential integrity constraints for each of them. Finally, we created a Requirements Catalog identifying each functional requirement the new system must perform along with all the data elements the system must incorporate.

Now that we had a clear understanding of the requirements of new system, we were able to investigate and research various software alternatives, including School Check-In, Insight by Simplicity - Student Tracking System, Student Tracking Systems, OrgSync, Outsourcing, and In-house development. After looking at the numerous features and capabilities of each potential solution, we reached a consensus and are making a formal recommendation to build the system In-house. This targets the problem with the most focused and viable solution – one that the campus IT Dept. has already proposed. It could be built directly on campus and eventually be more easily deployed to meet the needs of other campus departments.

Our findings are detailed in the following Systems Requirement Document. We have included pertinent supplemental information in the appendix section. We further believe a fully automated Student Usage Tracking System is important to the continued success of the LSC. Valuable time is being wasted in the cumbersome and inefficient tracking process. Finally, we the CIS 298 Special Projects Team firmly believe this project ultimately will be of significant benefit to both the LSC and EdCC in general, and are suggesting that EdCC's IT department move forward with the design and implementation of a new automated system.

CURRENT INFORMATION SYSTEM (AS-IS)

Introduction

The following section contains the current (AS-IS) system analysis. Our original focus was on the Learning Support Center (LSC), and we have expanded that scope to include various other areas on campus that provide various services to students. Our team investigated the problem, stakeholders, current processes, data and information requirements, current technology, strengths, and weaknesses extant in the AS-IS system. All this was necessary for us to gain an appropriate level of detail and insight to the inadequacies and shortcomings that users are currently experiencing. We have prepared an analysis of these specific areas to allow us a better understanding of the existing issues and to prepare us to determine what a viable solution would encompass.

Analysis Approach

During the systems analysis phase the team conducted interviews with various departments at the college to determine the current process for tracking students that use their services. See [Appendix A](#) for summaries of these interviews. We gathered forms that students fill out once a quarter for each department as well as any forms that are used for daily sign in/out activity. These forms are in [Appendix B](#). In addition, we obtained a copy of the MS Access database currently in use by the LSC for the purpose of initial student application and registration for LSC tutoring services. We have included information on the table structure and query code in [Appendix C](#). Prior to our team's involvement with this project, the IT department performed a rudimentary process analysis and authored Use Cases describing the student sign-in and quarterly intake processes (see [Appendix D](#)).

We also created a Functional Decomposition Diagram (FDD) to show the process for gathering and keeping track of student activities in the LSC (see [Appendix E](#)). The FDD maps the processes and steps involved with each process in the workflow. It focuses more on processes that the system must be able to handle rather than the flow of data. By using this analysis, we are able to determine the high-level steps involved in completing the work, independent of the system. Furthermore, we documented the existing

activities in the LSC in the form of a Swimlane Diagram and natural language (pseudocode) description (see [Appendix F](#)).

Problem

This project evolved from a need to automate the user sign-in/sign-out process for the LSC. The current procedures are manually executed and consist of a sheet of paper that students use to write in their name, time of day in & out, and subject area when visiting the LSC to obtain tutoring services. The LSC support staff must then determine the student's LSC use code and write that on the sheet as well. When the sheet is full, or at the end of the day, staff must then manually tally the total number of visits, and then total both the number of hours each student spent in the LSC as well as the aggregate number of overall student hours per sheet.

All of this takes a significant amount of staff time and is prone to human error. The LSC management inquired about the possibility of obtaining some sort of automated student tracking system, or device, which would electronically track each student when they first enter and leave the center. The college's IT department subsequently identified other student service providers that have experienced comparable challenges and that have expressed interest in a similar solution. Furthermore, the IT department has indicated that any solution should comprise a generic system that could be deployed campus wide with minimal customization, where all service provider data is contained within the IT department's operational data store (ODS).

Stakeholders

The following groups of people will be considered stakeholders for the project:

- **Learning Support Center Staff**
These include the primary project sponsors as well as the student support staff, and they will be affected first by the outcome of the project. While the project will also touch other similar groups, this particular group will see the first effects as they will be the pilot group.
- **Students**
The students that visit the multitude of departments affected by the system will be impacted, as they are the key "users" of the system.

Students will be swiping in and out of the department(s) as input into the system.

- **EDCC IT Department**

The IT department must develop and support the system necessary to manage the process. The performance and effectiveness of the system will have a direct impact on the credibility of the IT Department.

- **EDCC Faculty**

The faculty may be affected in the future as the information that is collected could be collected and directed into meaningful reports by course, topic, or department. The faculty may be able to use this information to gauge how students react to the workload and assignments given in a class.

- **EDCC Administration and staff**

The administration will be affected as the information collected could be converted to reports that will show the utilization of the different departments. Any other department that implements the technology will be affected by its efficiency and outcome, and will become a “client” of the IT Department in terms of system support.

- **CIS 298 Project Team**

While the CIS 298 project team is responsible for the initial systems analysis and report, the credibility of the team, the team leadership, and the process of allowing students to participate in live projects for the college are subject to review of credibility. The students and faculty involved must carry on with other projects at the close of the quarter, and since the project will expand beyond the quarter and life of the contributions of the team, quality is of the utmost importance to give subsequent CIS 298 teams enough information to be successful.

Processes

The intake and sign in/ sign out processes are currently labor intensive, paper-based and manually tracked. The individual process steps include:

1. A student visits the department (SLC, START, SSD Office, etc.) for the first time.
2. The student fills out an “intake” form and has an initial consultation with the department staff.

3. The department staff enters data about the student from the student intake form into their MS Access (or other) database.
4. The student visits the department for subsequent needs (usage). During each of these visits, the student signs-in on a paper-based log sheet and then utilizes the various tutoring services.
5. Upon the close of the visit, the student signs-out on the same paper-based log. As a contingency, the LSC support staff will sign-out any student who forgets to do so.
6. Steps 4 & 5 repeat throughout the quarter.
7. The LSC staff enters data collected from the sign-in logs periodically during the quarter (this may differ somewhat depending on the specific campus service provider).
8. The department administration analyzes reports quarterly from their database systems and looks for usage trends and any other meaningful information that can be gleaned from the data. The LSC emails a newsletter every quarter with summarized information gleaned from the sign-in sheet data (see [Appendix G](#)).
9. The SLC replicates a clean copy of the database to use for the next quarter, and the process starts over again.

Currently, each department has a "silo" database of their own creation, usually an Access database. These databases cover more than the sign in/out process and beyond this similarity they become proprietary to the department. The apparent lack of inter-department continuity, resources, technical know-how, and/or diversity in services provided has caused these silos to occur. Additionally, a lack of technology (card swipe readers and associated computer terminals) and concentrated effort has left the departments to their own means of tracking utilization, trends, and sign in/out processes.

Data/Information

A. Inputs:

The information requirements going into the system includes the following two forms:

- Assistance Request (quarterly intake form) contains information about the student, what programs they are in, the classes they

want assistance with, and the hours they will most likely be using the tutoring center.

- Student Daily Sign-In forms contains information related to the student program status, time the students arrives at the tutoring center, their name, the subject they are seeking assistance with, and the time they leave. There is also a tally for the total visits and hours per sheet.

We further examined the data requirements for the various campus departments relating to login and logout procedures, and completed an Information Commonality Matrix comparing each piece of data with the department that uses it (Refer to [Appendix H](#)).

B. Outputs:

The information generated by the system includes:

- A manual tally of the total time (hours) of tutoring time, mined from the blue Student Daily Sign In sheets.
- Various queries, as listed below, are used to determine usage of tutoring services by students. These include:
 - List of non-native English speaking students
 - List of tutorial center vocational students
 - Number of requests – all departments
 - Number of requests – Math
 - Students in EdCap
 - Email
 - Student table query
 - Survey query – just department
 - Survey query – must have course number

Technology

- The current system computer hardware is a generic PC computer with accompanying external peripheral equipment and accessories such as printers, fax machines, routers, etc.
- The current system application software being used is Microsoft Office Professional 2010, specifically the Microsoft Access and Excel components. Current system operating system software is Windows 7.

System Strengths

- The current system is used for basic tracking of student information and usage of the Learning Support Center, thus there are minimal information requirements.
- The existing system works for its intended purposes.
- Students do not need their ID to login.
- All forms are in English.
- The current system is drop-in only, thus removing the need to track appointments.
- It is simple to use and maintain by support center staff.

System Weaknesses

- The current system involves manual logins/logouts, calculations, and data entry into the Access database, which can be labor intensive and introduce human error into the system.
- The current system starts a new Access database each quarter, which can morph slightly from quarter to quarter. This limits the ability to compare information for examining long term trends. In addition, each database contains redundant information.
- Students occasionally forget to sign out using the Student Daily Sign-in sheet, which requires staff to estimate student hours.
- The current system makes it difficult to pull meaningful information from the system and cannot track vocational assistance given based on specific students or courses.
- The information for the current system is manually input into the database by the Learning Support Center staff when they are not busy. This affects the reliability and validity of the information when querying the system for the most up-to-date results.
- The current system requires students to fill out an Assistance Request form each quarter.
- Because this system is a self-contained individual silo, it doesn't fall under the auspices of the school's IT department and therefore any problems cannot be addressed by current IT staff.
- It contains redundant information that is contained not only in this system but in other systems campus wide as well.
- The data in the database is not currently capable of being utilized by any external parties that may be interested in tracking student facility usage.

TO-BE MODEL - OVERVIEW OF THE PROPOSED SYSTEM

Introduction:

The proposed system will automate the way student usage of the LSC is tracked. It will feature a method by which the LSC can capture student service information (based upon the current intake form) when they first elect to use the LSC facility. In addition, it will also serve to track arrival and departure information on each subsequent visit directly from the magnetic strip on the back of the ID badge. When users first arrive at the LSC, they will swipe an ID badge through a card reader of some type that will then link the ISO image on the ID card to capture the student's information in the college's HP9000 system and the student's arrival time. Students will then use a computer terminal to enter the specific reason they are using the LSC at that particular time – specifically the course with which they need tutoring assistance and the associated single-letter LSC program code. When they are finished using tutoring services, they will again swipe their ID badge in the system to capture their departure time.

Purpose:

The purpose of this automated system is to eliminate the need for students and LSC employees to enter student usage information manually on paper intake forms and log sheets, which then need to be hand tallied and entered by LSC staff. This will provide more accurate and reliable tracking of when students arrive and leave the LSC. Currently, students don't always remember to write down their "Time Out", at which point employees manually enter an approximate time for the student. The new system should help eliminate this "duration of usage" anomaly. An automated system will also eliminate the need for employees to manually tally the LSC usage (program) code, total number of visits, and total student hours of LSC usage on the paper form.

Scope:

The scope of the new system will encompass analysis of the current AS-IS system, identifying the functional and data requirements of the TO-BE system, researching potential solutions, recommending a specific solution from those researched, and designing and implementing the recommended solution. The data to be contained in the new system will include

information about EdCC departments, courses, degrees, programs, users of LSC tutoring services, and visits for LSC tutoring services. While consideration of other campus departments has been included in the AS-IS analysis, the focus of this project will be on the specific needs of the LSC itself and will not include requirements of any other department at this time.

Out of scope is anything not specifically mentioned in the above scope definition or any other functionality of the LSC, including information about tutors and employees, tutoring services, the LSC writing center, and any other information not previously identified. In addition, the current team will not be involved in the design and implementation processes. Their work will only encompass requirements analysis and solution research. They will construct data and process models to support the various system requirements, and will create a Requirements Catalog further detailing the specific functionality and data needs of the new system.

Objectives:

- To provide an automated logging and tracking system for student usage at the LSC using a card-swipe system.
- To minimize the amount of time managing the current system. Maintaining the current system and manually entering data is labor-intensive and consumes limited staff resources.
- To automate calculations of student usage, hours, and visits. Creating a system that can do these calculations automatically will reduce the amount of time required to maintain the student information by LSC staff.
- To generate queries and pre-formatted reports directly from the system. This will allow the LSC to track student usage and trends in requests for tutoring assistance.

Benefits:

- The new card-swipe system will be automated, logging students in and out quickly and efficiently.
- Data entered into the system using the card-swipe system will pull related student information directly from the college's database, thus reducing the potential for incorrect data.
- Information validation - the system will ensure accuracy and consistency in data entry by using data integrity constraints to control data inputs and the resulting outputs. This will help prevent errors and inconsistent data generation.

- First-time visits to the LSC will no longer require a staff member to enter student information into the system. The new system will gather much of that information from the initial card-swipe and the rest can be filled in by the student using a computer terminal.
- Automated calculations will eliminate the necessity to manually tally the log-in sheets. This will allow the staff to focus on tutoring services while reducing the potential for human error in processing the data.
- Automated calculations will ensure that the information mined from the system for queries and reports is accurate and up-to-date.
- The new system will have support from the college IT Department.
- The new system should remove the need for creating distinct, quarterly databases and Assistance Requests.
- Assuming a card-swipe machine will be mounted next to the entrance of the LSC, the new system can potentially reduce the number of missed 'log-outs'.
- The new system will provide a functional logging system that can be readily modified or expanded for use by other departments and facilities.
- An automated system will require less maintenance and therefore will reduce the amount of time spent by SLC staff processing student information, allowing more time for actual student interaction.
- The database for the new system will not change or morph quarterly, which will allow the use of queries and reports to track long-term trends of student usage.
- Use of the new system will allow college administration to track student use of services campus-wide.

Functional Requirements

Introduction:

The purpose of determining functional requirements is to clearly identify what the new system must accomplish in regards to external processes and internal procedures. This includes user interaction capabilities as well as internal calculations and operational code. These requirements don't explain "how" the system is to handle them, but rather "what" is needed in order to meet the objectives of the project. They include statements concerning what the system must be able to do or accomplish. Various modeling techniques are utilized to assist in determining these functional requirements.

Analysis Approach:

The Use Case Scenarios contained in this document illustrates how the process flows through the system (see [Appendix I](#)). These scenarios document the primary actor, the individual process steps and flow of events, and the related conditions and rules necessary to complete each step in the workflow. A Use Case Diagram is also included that visually depicts the interaction between the users (external actors) and the processes within the system itself (see [Appendix I](#)). In addition, we looked at the activities involved in obtaining services from the LSC and created both a Swimlane Diagram and related pseudocode to visually depict and document those activities (see [Appendix J](#)).

This exercise shows the patterns of system usage, and establishes the requirements for any TO-BE system that is constructed. While these requirements are proposed, they were derived from a study of the AS-IS process, merged with the prospect of newer technology (such as the card readers, ODS, and updated database technology), and transformed into the above TO-BE models included in the appendix.

Data Requirements

Introduction:

The purpose of determining data requirements is to clearly identify what data the new system must capture and store. This includes identifying various themes and the data associated with them. These should then translate into the various entities and associated attributes that will comprise the structure of the database itself. We employed data modeling to construct a normalized model used to create the various tables and relationships, and a data repository that defines the properties for each piece of data.

Analysis Approach:

The logical Entity Relationship Diagram (ERD) shows the relationships between each entity and the attributes that describe each of those entities (see [Appendix K](#)). In addition, the Metadata Dictionary defines the objects in the database and includes information about each entity and attribute, along with the domains and referential integrity constraints for each of them (see [Appendix L](#)). Finally, we looked at the life cycle of the "student" entity and created a State Transition Diagram to document each student from the time they first visited the LSC until they no longer needed to use those services (see [Appendix M](#)).

Requirements Catalog:

We have created a Requirements Catalog that defines the new system functionality using “must/shall be able to do” statements. We referenced the Use Cases to help formulate these statements (see the Functional Requirements section). The specific data information requirements are also included in the Requirement Catalog (see [Appendix N](#)) .

ALTERNATIVES ANALYSIS

Software Packages

These software packages are off-the-shelf packages that we considered as alternatives to In-house development:

1. School Check-In

a. Site: <http://www.schoolcheckin.com/>

b. Pros:

- i. Track & total the hours for your volunteers both on & off campus.
- ii. Keeps permanent information records
- iii. Instant reports on everyone who's on campus
- iv. Complete reporting capability built in
- v. Full Import & Export capability built in
- vi. Know who is on campus, when they arrived, & when they left
- vii. Inexpensive software
- viii. Free trial period

c. Cons:

- i. Annual external costs for support
- ii. No cost breaks for multi users
- iii. Not customizable or open architecture
- iv. Not fully targeted solution
- v. Uses name badges (beyond scope)
- vi. Limited to maximum of 5 computers per campus unless a surcharge is paid

d. Costs:

- i. \$250/ first year per terminal for enterprise system
- ii. \$375/ per terminal over five

2. Insight by Simplicity - Student Tracking System

a. Site: <http://www.symplicity.com/insight-advising>

b. Pros:

- i. Academic-related, student tracking system
- ii. Customizable
- iii. Custom queries and reports
- iv. Administer surveys on data
- v. Interfaces to Excel
- vi. Monitors wait times

c. Cons:

- i. Part of much larger software system
- ii. Uses its own kiosk for swiping in and out

- d. Costs:
 - i. Cannot be determined without a demo and proposal
- 3. Student Tracking Systems Software
 - a. Site: <http://studenttrackingsystems.com/overview>
 - b. Pros:
 - i. Works with any card reader system
 - ii. No client software to install
 - iii. Works with any lab with network access
 - iv. Log, track, and report on time/ duration
 - v. Web-based access
 - vi. Academic-related, student tracking system
 - vii. Tracks subject matter
 - viii. Customizable per student (web form for student intake)
 - c. Cons:
 - i. Pushes extra, premium hosting
 - ii. Variable rates for custom features
 - d. Costs:
 - i. Hosted: \$25 per room per month
 - ii. Premium Hosting: \$35 per month
 - iii. Pre-Installed Server: Varies by configuration
 - iv. Enhancements: \$20-\$120 per hour
- 4. OrgSync software
 - a. Site: <http://www.orgsync.com/features/card-swiping-technology>
 - b. Pros:
 - i. OrgSync's card swipe technology helps campuses to seamlessly track attendance and assign timesheet hours for each student
 - ii. The card swipe stores a record of all events attended by students.
 - iii. Orgsync can create separate portals for each department, program, and organization
 - iv. The platform requires minimal campus IT maintenance
 - v. The Orgsync platform is compatible with almost every magnetic card reader and works in both wired and wireless environments
 - vi. The cloud-based, software as a service (SaaS) platform is available on-demand for all users and allows OrgSync to release new products, platform updates, and feature enhancements to everyone at once
 - vii. All data stored in OrgSync is continuously backed up to ensure the information is secure

- viii. Orgsync provides a number of online features to meet the needs of administrators, departments, programs, organizations, and students
<http://www.orgsync.com/features>
- ix. 256-bit SSL encryption for all communication behind the login wall
- c. Other benefits include:
 - i. Easy setup
 - ii. Low costs
 - iii. Secure data
 - iv. Scalable
 - v. Free Maintenance (part of contract services)
 - vi. On-demand access
 - vii. FERPA compliant
 - viii. Setup & training provided
 - ix. Dedicated consultants
 - x. Campus branding
 - xi. Community website
 - xii. High student adoption
 - xiii. 24-Hour customer support
 - xiv. Unlimited usage and data storage
 - xv. Maintenance & platform updates
 - xvi. Discounts for multi-year contracts
- d. Cons:
 - i. Data maintained off-site
 - ii. Relies upon outside IT staff and equipment
 - iii. Requires contract subscriptions (1, 3, 5-year) for continued use and support
 - iv. Requires separate purchase of card swipe equipment
 - v. Requires consultation for pricing information
 - vi. Each department requires a separate subscription
 - vii. May not be compatible with existing equipment
- e. Options:
 - i. Wired or wireless card readers
- f. Costs:
 - i. Cannot be determined without a demo and proposal

In-house Development

This involves having the EdCC IT Department build the application on-site.

Pros:

- Familiarity with the current network infrastructure and Legacy HP 9000 system
- The solution can be targeted directly to the solution without having to customize an existing software package
- Developers are on college payroll eliminating the need to pay outside contractors/VARs
- Ability to leverage existing hardware and software
- Close proximity to the client will enable more frequent feedback opportunities
- Ability to build a scalable system that could be integrated campus wide
- Lower and more predictable maintenance costs
- Developers are FERPA compliant
- No external fees/contracts or ongoing expenses
- Ability to easily integrate the use of EdCC student ID cards instead of custom ID badges required by other products
- Data is securely maintained on-site
- Can be developed in the language and on the platform of choice
- Card-reader hardware already exists in campus inventory
- In-house development could leverage from student talent through internships

Cons:

- Requires dedicated allocation of internal resources to complete and is subject to the constraints of developer availability in relation to existing projects already underway
- Costs for development must be initially absorbed by the IT Dept. budget and subsequent recovery of costs to internal business units subject to budget constraints of said units
- Involves a potentially longer development cycle than buying an existing coded package
- Any maintenance issues must be dealt with by EdCC IT staff and cannot be easily outsourced to external entities

- Potential conflict could arise in development prioritization among projects for different business units

Outsourcing

This would involve the use of an outside entity/organization to track this information. This would involve the outsourcer having access to student information. Because of FERPA regulations and requirements, access to student information must remain within the confines of the EdCC campus domain. This creates an informational constraint that eliminates outsourcing as a viable alternative.

RECOMMENDATION

We have researched the various alternatives above and have made some decisions as to the viability of each.

- School Check-In: It is not completely on target to the solution as it is engineered to manage the front desk of schools. The licensing is also somewhat limited covering only five initial installations without increasing costs. In addition, there is no cost break for additional users. Furthermore, it is designed to create and use its own badges instead of client ones. Thus, we conclude this software package will not meet the needs of the LSC or campus IT department.
- Insight by Simplicity - Student Tracking System: This system requires the purchase of a larger host software package in order to run the student tracking module. Very little information regarding cost is available without committing to a product demo and an RFP. In addition, this system requires special kiosk hardware proprietary to the system. Again, due to the initial potential investment and requirements for additional information, we decided that this product will not be the most advantageous for the college.
- Student Tracking Systems: This product “pushes” for external hosting although it can be kept in-house. While it is specifically developed and targeted for use in a student tutoring center, it requires monthly customization and maintenance fees. Of all the software packages researched, this particular one would best meet the needs of the LSC specifically, although it may not be suitable for use in an environment other than a tutoring center. Therefore, we do not fully recommend this alternative.
- OrgSync: Although this software package is the only alternative presented that claims to be FERPA compliant, the data is maintained offsite and this could result in data integrity and security issues. In addition, it relies on outside IT staff & equipment, and requires subscribing to yearly maintenance contracts. Furthermore, each business unit using the system must purchase a separate usage subscription and maintenance program (it basically creates a separate/unique website for each silo-user). Moreover, it may not be compatible with all existing equipment, thereby necessitating the purchase of additional equipment. Finally, this alternative requires a product demonstration in order to receive further details and pricing

information. While it is used in over 250 colleges and universities nationwide, we feel that it would conflict with existing campus systems and it not worth pursuing.

- Outsourcing: Since the data would be handled by an outside entity, this would create a conflict to the FERPA regulations and we therefore conclude this is not a viable alternative.
- In-house Development: We feel this alternative offers the best flexibility and scalability of all those researched. It targets the problem with the most focused and viable solution – one that has already been proposed by the IT department itself. The system can be developed directly on campus and could be more easily expanded and deployed to meet the needs of other campus departments. Therefore, we fully believe this alternative will best meet the needs of all vested stakeholders.

CONCLUSION

We have conducted a careful analysis of the LSC's student intake and visit system, its processes, actors, and their associated needs and relationships. By interviewing the LSC staff that will use or benefit from the system, and by documenting the processes and functions of its current "AS-IS" state, we have isolated the system's functional requirements and drafted a proposed solution to meet those needs.

Based upon the proposed "TO-BE" system's expected functionality, the LSC's requirements, suggested input from personnel interviews, and the need to create a feasible system that will properly address these issues, we recommend that the LSC Student Usage Tracking System be built in-house by the EdCC IT Department. This should provide the best solution of all alternatives and give the IT department the most flexibility in time and cost considerations. In addition, outstanding issues and assumptions are included in [Appendix O](#).

APPENDIX

- A. Meeting Notes
- B. Original Source Documents
- C. As-Is Database Structure
- D. As-Is Use Cases
- E. Functional Decomposition Diagram
- F. As-Is Swimlane Diagram & Pseudocode
- G. Learning Support Center Newsletter
- H. Information Commonality/Variability Matrix
- I. To-Be Use Case Diagram & Use Cases
- J. To-Be Swimlane Diagram & Pseudocode
- K. Entity Relationship Diagram
- L. Metadata Dictionary
- M. To-Be State Transition Diagram
- N. Requirements Catalog
- O. Ongoing Issues & Assumptions

A: Interview Notes

CIS 298

Normal – Dion

SLC Project

Bold – Suzanne

Italics – Bruce

BOLD BLUE - PETE

Meeting Notes 4/11/12 - Jeremiah Roland, 3:30 PM, Student Learning Center

- Pat was not available for the meeting at the last minute
- **Previous study of needs – 2 years ago**, Vic would have the results
 - Needs haven't changed much since

PROBLEM: the current manual system incurs around 300 handwritten pages per quarter – that is too much manual tally work to do and new information for queries is not easily obtainable by Jeremiah.

SCOPE

- Scope is for tutoring center, NOT the writing center
 - **On-line tutoring is done elsewhere**

EXISTING SYSTEM

- Database is currently in MS Access
 - Willing to move away from Access in favor of a better solution
- Registration input is done via manual input today (pink sheet)
 - Registration is done once per quarter
 - Most of what is asked on the form is already within blackboard
 - Name, student ID, etc
- Sign in sheet is used for session sign in (blue sheet)

- Used for sign in and sign out
- Front desk staff has to catch students on the way out to get them to sign out
 - There are approximately 3 occurrences per every sign in sheet
- Currently have to manually tally the time (hours) of tutoring time, mined from the blue sign in sheets
- HP 9000 holds info re: students program
- They currently start a new Access database each quarter.
- Currently has no reports- analysis is performed manually
- *A Work Request has been submitted to the Help Desk*
- **They do have CWU students who show up and don't have an EdCC ID card**
- **They don't ask for student ID when students come in for help.**
- **They track students by type – "T" is for technical/vocational and "A" is for transfer degree students (A is the default used).**
- **All tutoring is done on a drop-in basis – there are no appointments available.**
- **Current Access DB is copied, cleaned, compacted, and refreshed EACH quarter.**

NEW SYSTEM

- Somebody has the swipe machine already for swiping student IDs to sign in
 - Goal is for students to sign in electronically by swiping a student ID
 - Contingency plan is to put a self serve kiosk at the front desk of the SLC and allow students to sign in electronically
 - **Swipe machine, card information is captured by Bb**
- Info would be captured by Blackboard "crosswalk"
 - **Crosswalk info is a translation to student id**
- System would help make SLC more efficient
- Swipe card system would automate the sign and sign out so that the tally could be done electronically
- **2 computers will be used for student check-in/card swipe**
- New system needs to be only in English

- If using the card swipe system, self entry/ registration would be ideal
- SLC system must support on-site only, no pre-scheduling, no web access to public
- **It would be helpful if an advisor could see information on how students are being helped – what services they are taking advantage of**
- Student must self-select which courses for which they need help, SLC does not want to see all courses they are taking
- *No auto-population of classes, but it would be nice to give the students a list of the classes they are currently enrolled in so they can pick the class they need help with rather than manually enter it.*
- Could be good for other departments to see reports online
- **Don't need to capture tutor scheduling information**

REQUIREMENTS

- *Track student hours in SLC*
- *Generate reports and query system*
- *Id swipe to populate student sign-in and retrieve relevant data (classes, etc)*
- *Automate required calculations*

ISSUES

- Cannot extract meaningful data from the sign in sheets
- Need to develop a solid contingency plan for manual log ins
- **Need to keep track of how much vocational help is given**
- The existing Access databases may morph slightly quarter over quarter
- Cannot see long-term trends
- **Issues (if using student Id card)**
 - **Need a work around if student does not have card**
 - **Central Washington students do not have Ids**
- *Students occasionally forget to enter a time-out on the Sign-in Sheet - allow for in database*
- *Unknown but limited budget constraints – follow up with Pat*

BUSINESS RULES

- A student can work with multiple tutors **on each visit**
- A tutor can work with multiple students at once
 - Three students to one tutor is the max ratio

INFORMATION

Center

- SLC sees 150 students per day, **300 swipes a day just for learning center**
- **Center is open on Saturdays starting the 2nd month in the quarter**
- SLC works on a drop-in schedule only- no pre-scheduling of sessions/ first-come first-served

Students

- **Running Start (high school) is seen the same as a college student**
- **Central Washington students do not have Edmonds ID**
- ***Vocational students also use the center without ID***

Tutors

- Do not need to link to tutor info system
 - No tutor management
 - **No association needed between student and tutor**

DOCUMENTATION

Forms

- **All forms are in English**
- There are approximately 300 pages of sign in sheets accumulated per quarter
- **Pink sheet for student info is filled out once per quarter**
 - **Manual entry**
 - **Form contains:**
 - **Student ID**
 - **Date**
 - **Name (Last, First, Alternative Name)**
 - **Email**
 - **Is English your first language: Y, N: first language is**
—
 - **Program (Transfer, High School, ABE/GED, RunStrt, CWU, Cert, ATA, IBEST, EdCAP)**
 - **Classes needing assistance: (dept/Course #)**
 - **Student Name (print)**
 - **Student Signature and date**
 - **Office Use Only**
 - **Vocational Check**
 - **Db Entry**
 - **Back of form has section for likely hours of Tutoring Center use**
 - Mistake on the pink form- not all student IDs start with '95'
- **Blue sheet**
 - **Student sign in, how long student is in center**
 - **Analysis is manual**
 - **Tutors figure out timeframes and do totals in free time**
 - **Prefer not to tally up hours**
 - **Students to do their own sign in would be preferable**
 - **~ 300 pages per quarter**
 - **Form contains:**
 - **LSC use (A or T – student program type)**
 - **Time In**

- **First Name**
- **Last Name**
- **Subject**
- **Time Out**
- **Total time (calculated manually by LSC staff)**
- Left column of the blue sign in sheet is used to track the type of student
- **Need to associate each student with a program, vocational & certificate**
 - T is for technical or vocational students
 - A is for Associates or Transfer degrees (default)
 - Did not use a V for vocational since it looked like a check mark

Reports

- Reports are needed to help justify budget funding by showing student usage
- *Would like to do reports that identify student use, periods of high demand, etc.*

Queries

- Would like to query by subject (which is critical) and class even down to the individual course number

Misc

- **Jeremiah sends out email survey after quarter to get feedback (informal, personal, not a form or metric)**

FOLLOW-UP

- Are there similar swipe systems in place? **No other system similar to what is needed on campus**
- → **Jeremiah will get us the Relationship report from Access**
 - **They do not need all the information currently listed in Access**
- → **Pat to give us a list of classes they tutor for, also sample reports**
- → *Interview START & SSD for interest in similar system*

Meeting Notes 4/11/12 - Vic Portolese, 4:30 PM, IT Dept

- Mistake on the pink form- not all student IDs start with '95'
- EDCC already has the crosswalk
 - It updates once per day from blackboard
 - Stored on site in ODS
- The system must be built from the ground up
 - Vic has an idea of what he wants to see, but he's not sharing in order to be impartial
- Should be an internet aware app/ HTML 5
 - No preference yet on coding solution, but must be SQL database with web front end
 - **HTML5 – standard, with SQL server backend, possibly Cold Fusion**
 - **Internet application, it will need security**
- We should be thinking generic and standardized when building the app
 - Should consult with START (*Tim Haas*) & SSD (*Dee Olsen*) for the same scope
 - Build the app to support every department
 - Don't get too specific
 - *Explore possibility of modularization for scalability based on group needs.*
- Diana Dalton (yes, related to the Dalton gang) can show us the preferred documentation standard for documenting use cases and could provide the research done two years ago
- A site will be built for us to update and post progress
 - No other reports will be due other than the project site
 - Stakeholders must visit the site for their updates

- Project may result in purchase of application, depending on recommendations
 - Will need to engage in feasibility study
- **There are 2 other projects collecting data** – *clarification?*
- **:: Need to track what services does the student use at the college – a student activities database, “track the life of a student”**
- **Google Doc location**
 - **Give project status weekly**
 - **A place to store working documents**
- **“success is based on the end user’s willingness to engage”**
- *Possible scalability for use with other organizations using modules to add additional capabilities*
- *Do NOT eliminate the possibility of more than just Edmonds, CWU, and high school students using the facility. (ex., City University)*
- *IT Department familiar with ColdFusion, ASP.Net, SQL Server*
- **Budget is not really an issue UNLESS there is a decision made to buy/purchase a specific product. But if it can be deployed campus-wide it will probably be a “build” implementation.**
- **For documentation templates, we can use the 233 and 234 class projects guidelines.**

FOLLOW UP

- *Make and model of existing swipe scanner to determine compatibility issues/constraints*
- *Explore existing software packages*

*Services for Students with Disabilities (SSD Office)

Dee Olson

Interview Notes 4.26.12

- SSD is very excited about the prospect of a sign in card swipe process
- Sign in is paper process today (on log)
- Other services:

- Tutoring
- Accommodations
- Testing accommodations
- Sign in process
 - Date/ time
 - Name
 - Not keeping student ID due to privacy issue
 - Why the student is here
 - Various reasons, such as special testing, etc
- 31 students tested this quarter
- Created code for each student test form
 - [Name][Last 4 of SID][1.5 or 2] (The last part is the extra time the student receives, time and a half or double time for test anxiety)
- Created sticker for the back of the ed pass with their code
 - Thought it would be nice to simply swipe the ed pass and have all of this info already
- Intake form is a prerequisite to SSD services
 - Independent of sign-in & sign-out and likely scope creeps into a separate database concern
 - Defines the classes for the student, what the disability is, etc
 - Drives an intake interview process
 - Intake is manual/ paper form process
 - All forms entered into an Access database manually
- No appointment is necessary, SSD works on an a walk-in basis
- Each student signs in per visit regardless if they have been through intake process or not
- Running start students won't likely have ed passes, so a contingency plan is needed
 - Could be manual keyed entry or sign in sheet and subsequent data entry
- Info security is critical
 - I had to avert my eyes when showing a completed student form
- Collected numerous forms for further analysis

*EDCC

Counseling Center Interview

5/2/12

- Using an Excel database to hold the data
 - Excel holds intake data & counselor's notes
 - Compiled and saved monthly
- Typical data
 - Counselor name
 - Date
 - Reason for appointment, from intake form
 - Gender
 - Birth date
 - Student ID (when applicable)
 - Special programs
- Has an intake form
- Limited by confidentiality
 - Not bound by HIPAA, but observes it and abides by it
 - Cannot share data with any outside party due to privacy
 - Data must be secure
- Target audience
 - Students
 - Members of the community
 - CWU Students
 - Prospective students
- Default card to swipe?
 - Need contingency plan for users without a card
 - Segregate data by type of visit
 - Inquiries
 - Office visits
 - Count of service used
- No new intake process per visit
- No sign in/ sign out
 - Visits are kept confidential
 - Only records of a visit are kept in counselor's notes
- There is approximately a 20% no-show rate for appointments
 - Visits are by appointment only, except in crisis situations
 - Walk-ins usually request info
 - 10k contacts per year 2010-2011

Meeting with Vic Portolese

5/2/12

- By choice drop-in departments are the core focus
- Counseling center is largely out of scope due to security needs
 - May need a simple count of visits without recording student data
 - May need a generic card to swipe when someone requests info

Testing Center Meeting

Interview Notes 5.14.12

- A lot of patrons are not students
- Every test has a different log-in
 - Wide variety of ways to track people based on the type of exam
 - Driven by the test and the governing body for whom the test is taken
 - Correspondence tests have their own logbook
 - Separate logbook for makeup tests
- Placement testers go into the advisor queue
- Other types of tests given
 - Pre-nursing tests
 - Correspondence tests for other schools
- No sign in for the testing center itself, all sign-ins are currently test-related
- GED is currently a paper/pencil test and has no electronic login
- SOP is to check ID before administering test
- Staff runs statistics at the end of the quarter
 - Likely an Excel spreadsheet/ chart
 - See attached example
- May have a need for standardized sign in/ sign out, but not too eager for it since the tracking is done at the test level rather than the department level.

B: Original Source Documents

**ASSISTANCE REQUEST
LEARNING SUPPORT CENTER
MUKILTEO HALL 113**

For Office Use Only
<input type="checkbox"/> Vocational Check
<input type="checkbox"/> Db Entry

Please print all information clearly and legibly.

Student ID # 95 _____ Date: ____/____/201__

Name: _____
(Last) (First) (Alternative Name)

Email: _____

Is English your first language? Yes No, my first language is _____

What program (s) are you in? (check all that apply)

- AAS/College Transfer High School Completion ABE/GED Running Start
 CWU Certificate ATA IBEST
 EdCAP

In which class(es) would you like assistance?

(Department)	(Course #)		(Department)	(Course #)
(Department)	(Course #)		(Department)	(Course #)

(Please fill out the schedule on the reverse of this paper to indicate when you most likely will use the Center)

RULES AND GUIDELINES FOR USING THE LEARNING SUPPORT CENTER: PLEASE READ AND SIGN

The mission of the Learning Support Center is to help students strengthen their college wide abilities by becoming independent thinkers with strong critical thinking skills in specific course content. To support this mission statement and to make sure that we can provide support to as many students as our funding and space allow, we request that students use the tutoring services no more than (5) five tutoring hours per week. *

PLEASE READ THE FOLLOWING GUIDELINES AND SIGN AND PRINT YOUR NAME AT THE BOTTOM TO SHOW THAT YOU HAVE READ, UNDERSTAND, AND COMPLY WITH THESE GUIDELINES.

Thank you! We look forward to working with you.

Students CAN Expect Tutors:	Students CANNOT Expect Tutors:
To focus on the process of problem solving	To do their homework for them
To help students become independent learners	To solve their math problems
To clarify concepts and vocabulary	To focus only on finding the answers to problems
To recommend successful study habits	To take the place of their instructor
To ask questions to create active learning	To work continuously only with them
	To "teach" the class course content
	To help prepare for the Accuplacer or SLEP test.

Student's Name (Please print legibly)

Student's Signature

Date

What hours will you most likely be using the Tutoring Center?

Monday	Tuesday	Wednesday	Thursday	Friday
<input type="checkbox"/> 8:30 - 9:30				
<input type="checkbox"/> 9:30 - 10:30				
<input type="checkbox"/> 10:30 - 11:30				
<input type="checkbox"/> 11:30 - 12:30				
<input type="checkbox"/> 12:30 - 1:40				
<input type="checkbox"/> 1:40 - 2:50				
<input type="checkbox"/> 2:50 - 4:00				
	<input type="checkbox"/> 4:00 - 5:00	<input type="checkbox"/> 4:00 - 5:00		
	<input type="checkbox"/> 5:00 - 6:00	<input type="checkbox"/> 5:00 - 6:00		

single letter

Learning Support Center

Student enters info

Student Daily Sign-In

LC person tally each day bar on time and on

You must have a request form filled out before signing in

LSC use	Time In	(print) First Name	(print) Last Name	Subject	Time Out	Total
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
Page _____	Total Visits _____		Total Hours → _____			

Counseling and Resource Center Intake Form



The following information is requested in order to provide you with quality services as well as assist our center with non-identifying data collection and funding support. **Please answer each question. Your information will be kept confidential.**

Personal Information

Today's Date _____ EdCC Student ID# _____

Name _____
Last First MI

Address _____
Street City State Zip Code

Home Phone _____ Email _____
 Permission to Leave Message? Yes No (Comments do not communicate via email)

Cell Phone _____ Gender? _____
 Permission to Leave Message? Yes No

Birth Date _____ Relationship Status Single Married
 Significant Other/Partner Divorced Separated

What is the ethnic group with which you most identify? (Please mark one)

- | | |
|--|--|
| <input type="checkbox"/> American Indian or Alaskan Native
Tribal Affiliation _____ | <input type="checkbox"/> Multi-racial (more than one race) |
| <input type="checkbox"/> Asian | <input type="checkbox"/> Native Hawaiian, other Pacific Islander |
| <input type="checkbox"/> Black or African American | <input type="checkbox"/> White or Caucasian |
| <input type="checkbox"/> Hispanic or Latino | <input type="checkbox"/> Other: _____ |

Is English your first language? Yes No **IF NO, what is your first language?** _____

Student Status:

- | | | |
|---|---|--|
| <input type="checkbox"/> Current EdCC Student | <input type="checkbox"/> Potential EdCC Student | <input type="checkbox"/> Current CWU Student |
| <input type="checkbox"/> Former EdCC Student | <input type="checkbox"/> Community Member | |

Do you receive services from or participate in any of the following departments or programs? (Mark all that apply):

- | | | |
|---|---|--|
| <input type="checkbox"/> BERT - WorkFirst | <input type="checkbox"/> Opportunity Grant | <input type="checkbox"/> TRIO |
| <input type="checkbox"/> EJCAP | <input type="checkbox"/> Running Start | <input type="checkbox"/> Worker Retraining |
| <input type="checkbox"/> ESL | <input type="checkbox"/> On-Campus Housing | <input type="checkbox"/> DVR |
| <input type="checkbox"/> I. & I | <input type="checkbox"/> International Student Services | <input type="checkbox"/> Services for Students with Disabilities (SSD) |
| <input type="checkbox"/> GED or High School Completion or ABE | | |

Are you a veteran? Yes No

Educational History

Is attending Edmonds Community College your **FIRST** college experience? Yes No

If you answered NO, please list other college level educational history and degrees earned:

Are you a high school graduate? Yes No **If YES, YEAR completed?** _____

Did you complete a GED or HS completion program? Yes No **If YES, YEAR completed?** _____

Educational Goals

What degree and program are you seeking here at Edmonds Community College (if applicable)?

- Transfer (AA or AS) _____ ATA (professional, technical) _____
 Certificate (less than 2 years) _____ AAS - T (ATA to transfer) _____
 Undecided GED/High School Completion Professional/Personal Development

Do you plan to transfer to a FOUR-YEAR College or University? Yes No

If YES, intended transfer institution _____ Major (if known) _____

Needs

How can the Counseling and Resource Center best support your educational and personal goals? Please check ALL that apply:

Career Counseling

- Choosing a Major or Course of Study
 Career Exploration, Planning, Direction
 Career Assessments (Interest and Personality Inventories)
 Career Research
 Career Decision Making
 Career Goal Setting
 Underemployed, unemployed
 Other Concern(s): _____

Personal Counseling/Support

- Relationship Concern(s)
 Family Concern(s)
 Abuse, Violence, Threat, Sexual Assault
 Depression, Sadness
 Mood Swings / Instability
 Anxiety, Worry, Panic
 ADD/ADHD
 Feeling Overwhelmed
 Stress
 Conflict Resolution
 Self-Esteem
 Self-Care
 Sexuality
 Eating Disorder / Body Image
 Loss, Grief
 Addiction, Substance Abuse, Recovery
 Irritability () or Anger ()
- Disability _____
 Adjustment or Transition
 Impulsivity
 Self-Harm
 Thoughts or Feelings of Suicide
 Other Concern(s): _____
- Referral to Longer Term Counseling
 Referral for Other Services/Resources: _____

Academic Counseling/Support

- Failing Class(es)
 Instructor/Staff Concerns
 Test Anxiety
 Academic Probation, Suspension or Termination (includes Financial Aid)
 Time Management/Organization
 Study Skills
 Learning Disability
 Other Concern(s): _____

Have you seen a counselor at the Edmonds Counseling and Resource Center in the past?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Have you seen, or are you currently seeing, a mental health professional?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
How did you find out about the Counseling and Resource Center?		

Date: _____

GED TESTING SIGN-UP SHEET

11:00 AM SESSION

No.	SEAT	NAME	N/R	SUBJECT
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

2:00 PM SESSION

No	SEAT	NAME	N/R	SUBJECT
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11				
12				
13				
14				

5:00 PM SESSION

No	SEAT	NAME	N/R	SUBJECT
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13				
14				

Services for **S**tudents with **D**isabilities



Edmonds Community College
Moonlake Terrace Hall Room 159



VOICE: 425-840-1320 FAX: 425-840-1022
Video Phone: 425-354-3113

Web: www.edcc.edu/ssd/
e-Mail: ssdmail@edcc.edu



INTAKE FORM

Which quarter/year you are registering: Summer 20 Fall 20 Winter 20 Spring 20

Student Identification Number: _____

Student Name: _____ Date of Birth: _____

Address (Street/PO Box) _____

City: _____ State: _____ Zip: _____

Phone: () _____ () _____ () _____
(home phone) (cell phone) (message phone)

e-Mail: _____ Check here to be on SSD distribution email list.

In Case of Emergency Contact: _____

Phone: _____ Relationship to you: _____

Referred to SSD by: _____

What is your program or degree goal? <input type="checkbox"/> Associate of Arts (AA) Transfer <input type="checkbox"/> Associate of Science (AS) Transfer <input type="checkbox"/> Associate of General Studies (AGS) <input type="checkbox"/> ATA: _____ <input type="checkbox"/> CERT: _____		<input type="checkbox"/> High School Completion <input type="checkbox"/> Running Start <input type="checkbox"/> EdCap <input type="checkbox"/> ABE/GED <input type="checkbox"/> Personal Enrichment	
Which of the following services do you require? <input type="checkbox"/> Note taker <input type="checkbox"/> Computer <input type="checkbox"/> ERGO Chair <input type="checkbox"/> Reader <input type="checkbox"/> Tutor <input type="checkbox"/> Scribe <input type="checkbox"/> ERGO Keyboard <input type="checkbox"/> Audio textbooks <input type="checkbox"/> Extended test time <input type="checkbox"/> Large print material <input type="checkbox"/> Interpreter for the Deaf <input type="checkbox"/> Braille material <input type="checkbox"/> Calculator <input type="checkbox"/> Other: _____			
I am receiving assistance from the following program(s): <input type="checkbox"/> DVR <input type="checkbox"/> DSB <input type="checkbox"/> Financial Aid <input type="checkbox"/> L & I <input type="checkbox"/> Veterans Administration (VA) <input type="checkbox"/> Workfirst (DSHS) <input type="checkbox"/> Workforce <input type="checkbox"/> SS <input type="checkbox"/> SSD			

I give Services for Students with Disabilities, permission to discuss this information, my needs for accommodation, and my academic progress with teachers, counselors, administrators, and/or staff to further my educational goals. I also hereby authorize EdCC to enter my disability status in the Student Management System for statistical purposes.

Student Signature _____ Date _____

PLEASE TURN OVER AND COMPLETE OTHER SIDE

Please check the sub-group(s) that apply(ies) to your disability(ies)

1 DEAF / HEARING	<input type="checkbox"/> A Deaf (Documented profound hearing loss making everyday auditory communication impossible, requiring the need for interpreter and other possible service.)
	<input type="checkbox"/> B Severe to moderate hearing loss (Documented loss which causes interference with normal auditory processing and may require adaptive equipment, note-taker, etc., but not interpreter.)
2 MOBILITY	<input type="checkbox"/> C Limited Gait or Range of Motion (Amputee, Hemiplegic, Brace/crutch user, Arthritis, etc.)
	<input type="checkbox"/> D Paraplegic (Wheelchair user, Spinal Cord Injury or other condition limiting use of lower extremities, etc.)
	<input type="checkbox"/> E Quadriplegic (Wheelchair user, Spinal Cord Injury or other condition limiting use of upper & lower extremities)
3 SPEECH / LANGUAGE	<input type="checkbox"/> F Speech or Language Disorder (Stutterer, Laryngectomy, Articulation or Fluency Disorder, Aphasia, Dysphasia, Dysarthria, Dyspraxia, etc.)
4 LEARNING DISABILITY	<input type="checkbox"/> G Attention Deficit Disorder (Medical/psychological documentation of ADD)
	<input type="checkbox"/> H Dyslexia or Processing Deficits (Appropriate documentation for specific learning disability)
5 BLIND/VISUAL	<input type="checkbox"/> I Blind (No light perception or by definition of legal blindness)
	<input type="checkbox"/> J Visual Disorders other than Blind (Nystagmus, Strabismus, Cataracts, etc.)
6 CHRONIC / ACUTE HEALTH	<input type="checkbox"/> K Cancer (Hodgkin's, Leukemia, Carcinoma, etc.)
	<input type="checkbox"/> L Cardiovascular/Pulmonary (Cardiac Diseases, Hypertension, Atherosclerosis, Thrombosis, Chronic Bronchitis, Asthma, Emphysema, etc.)
	<input type="checkbox"/> M Orthopedic Conditions (Arthritis, Osteoporosis, Ankylosing Spondylitis, Degenerative Disk, Fractures, etc.)
	<input type="checkbox"/> N Organ, Blood, Gastrointestinal, Connective Tissue, Immune Disorders (Renal Disease, Diabetes, Lupus, CFS, HIV/AIDS, Anemia, Sickle Cell, Crohn's Disease, Fibromyalgia, Diverticulosis, Allergies, etc.)
7 NEUROLOGICAL / NERVOUS SYSTEM	<input type="checkbox"/> O Motor Neuron (Cerebral Palsy, Seizures, Multiple or Amyotrophic Sclerosis, Tourette Syndrome, Parkinson's, Migraine, Polio, Peripheral Neuropathies, Muscular Dystrophy, etc.)
	<input type="checkbox"/> P Acquired Brain Injury (Head injury/trauma to brain from external or internal forces such as: Concussion, Contusion, CVA, Aneurysm, Meningitis, Abscess, Brain Tumor, etc.)
	<input type="checkbox"/> Q Developmental Disability
8 PSYCHOLOGICAL / EMOTIONAL	<input type="checkbox"/> R Mental Disorders (Disorders diagnosed according to DSM-IV classifications such as: Schizophrenia, Bi-Polar, Personality Disorders, Depression, Anxiety, Eating Disorders, Post Traumatic Stress Disorder, etc.)
	<input type="checkbox"/> S Autism Spectrum Disorders (Autism, Asperger's Syndrome, Pervasive Developmental Disorders, etc.)

Services for Students with Disabilities require documentation from a professional such as a physician, psychologist, health care provider, or psychological evaluator; results which states your disability and recommendations for accommodation at Ferrands Community College.

Documentation: Yes No Pending

Physician or Counselor _____ Phone _____

SPRING 2012

SSD TEST LOG

No.	DATE IN	INT	STUDENT NAME	CLASS	TEST	INSTRUCTOR	BEGIN DATE	TIME	INT	END DATE	TIME	INT	RETURN HOW	DATE RET'D	TIME	INT
1456																
1457																
1458																
1459																
1460																
1461																
1462																
1463																
1464																
1465																
1466																
1467																
1468																
1469																
1470																

RETURN HOW : M=Campus Mail PU=Instructor Pick-up O=Online E=E-Mail F=Fax

C: As-Is Database Structure

Student Requests

Student ID:

Last Name:
First Name:
E-mail:

English as First Language
Native Language:

Date	Dept	Course	Face_2_Fai	Evenin	Online	Hybrid
*		0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Times Available:

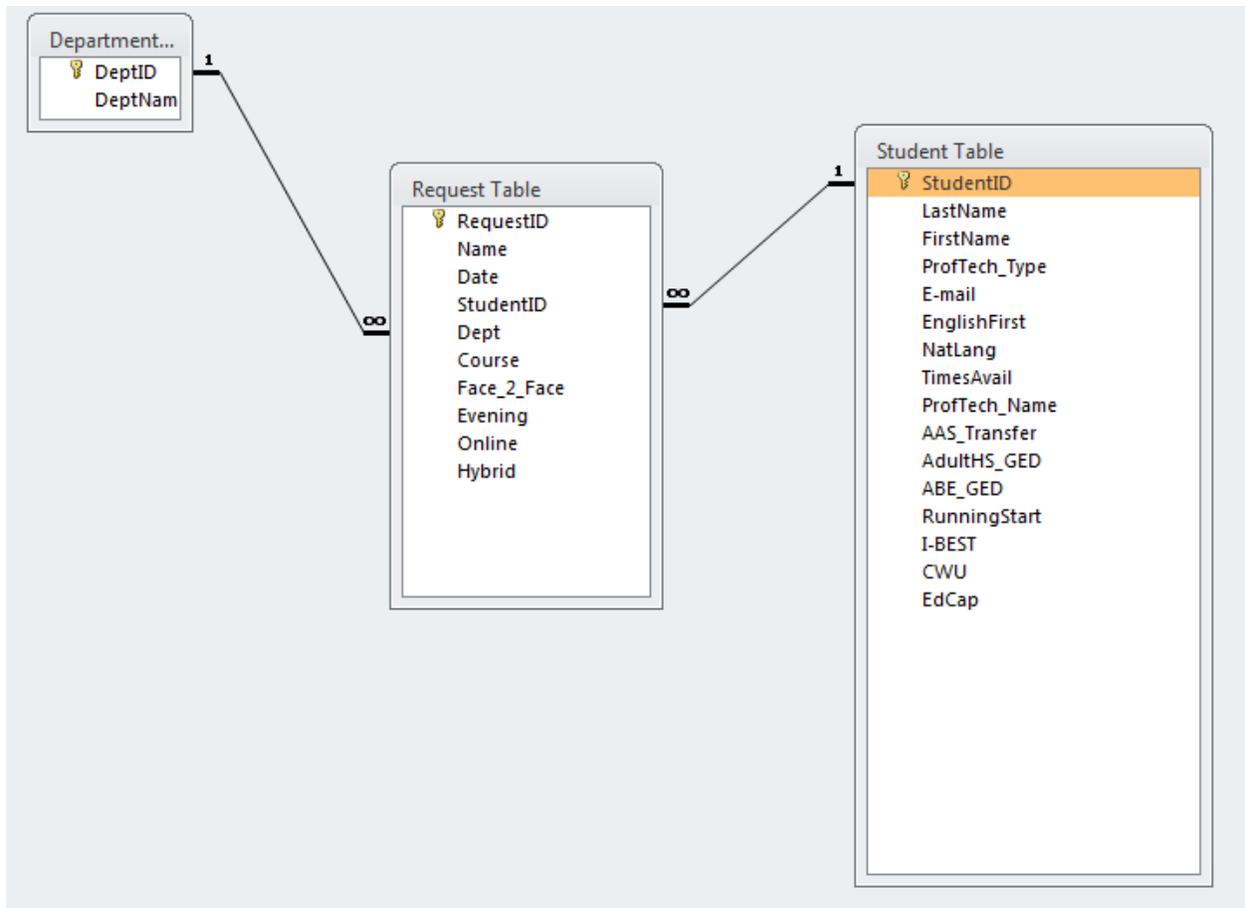
Only choose a Prof/Tech Type for Students who are listed as such in the Voc Book.
 If you choose this by accident use the backspace key to erase.

Prof/Tech Type:
Prof/Tech Name:

AAS/College Transfer
 ABE/GED
 CWU
 I-BEST

EdCap
 Running Start
 Adult High School/GED

Record: 1 of 1
Unfiltered



QUERY CODE

List of non-native English speaking students:

```
SELECT DISTINCTROW [LastName]+", "+[FirstName] AS Name, [Student  
Table].StudentID, First([Request Table].Dept) AS FirstOfDept, [Student  
Table].NatLang
```

```
FROM [Student Table] INNER JOIN [Request Table] ON [Student  
Table].StudentID = [Request Table].StudentID
```

```
GROUP BY [LastName]+", "+[FirstName], [Student Table].StudentID,  
[Student Table].NatLang, [Student Table].EnglishFirst
```

```
HAVING ((([Student Table].EnglishFirst)=No));
```

List of Tutorial Center Vocational Students

```
SELECT DISTINCTROW [LastName]+", "+[FirstName] AS Name, [Student  
Table].StudentID, [ProfTech_Type]+": "+[ProfTech_Name] AS Degree,  
First([Request Table].Dept) AS Request
```

```
FROM [Student Table] INNER JOIN [Request Table] ON [Student  
Table].StudentID = [Request Table].StudentID
```

```
GROUP BY [LastName]+", "+[FirstName], [Student Table].StudentID,  
[ProfTech_Type]+": "+[ProfTech_Name], [Student Table].ProfTech_Type,  
[Student Table].LastName, [Student Table].FirstName
```

```
HAVING ((([Student Table].ProfTech_Type)<>""))
```

```
ORDER BY [Student Table].LastName, [Student Table].FirstName;
```

Number of Requests – All Departments

```
SELECT DISTINCTROW [Department Table].DeptID, Count([Department  
Table].DeptID) AS CountOfDeptID
```

```
FROM [Department Table] INNER JOIN [Request Table] ON [Department  
Table].DeptID = [Request Table].Dept
```

GROUP BY [Department Table].DeptID;

Number of Requests – Math

```
SELECT DISTINCTROW [Request Table].Dept, [Request Table].Course,
Count([Request Table].Course) AS CountOfCourse
FROM [Department Table] INNER JOIN [Request Table] ON [Department
Table].DeptID = [Request Table].Dept
GROUP BY [Request Table].Dept, [Request Table].Course
HAVING ((([Request Table].Dept)="math"));
```

Students in EdCap

```
SELECT [Student Table].StudentID, [Student Table].LastName, [Student
Table].FirstName, [Student Table].[ProfTech_Type]+": "+[ProfTech_Name]
AS Degree, [Student Table].AAS_Transfer, [Student Table].AdultHS_GED,
[Student Table].ABE_GED, [Student Table].EdCap
FROM [Student Table]
WHERE ((([Student Table].EdCap)=Yes));
```

E-Mail

```
SELECT [Student Table].LastName, [Student Table].FirstName, [Student
Table].[E-mail]
FROM [Student Table]
WHERE ((([Student Table].[E-mail])<>"nul"));
```

Student Table Query

```
SELECT [Student Table].LastName, [Student Table].FirstName, [Request Table].Dept
```

```
FROM [Student Table] INNER JOIN [Request Table] ON [Student Table].[StudentID] = [Request Table].[StudentID];
```

Survey Query Just Department

```
SELECT [Student Table].FirstName, [Student Table].LastName, [Student Table].[E-mail]
```

```
FROM [Student Table] INNER JOIN [Request Table] ON [Student Table].StudentID = [Request Table].StudentID
```

```
WHERE ((([Student Table].[E-mail]) Like "*") AND (([Request Table].Dept)=[Type Department Name:]));
```

Survey Query Must Have Course Number

```
SELECT [Student Table].FirstName, [Student Table].LastName, [Student Table].[E-mail]
```

```
FROM [Student Table] INNER JOIN [Request Table] ON [Student Table].StudentID = [Request Table].StudentID
```

```
WHERE ((([Student Table].[E-mail]) Like "*") AND (([Request Table].Dept)=[Type Department Name:]) AND (([Request Table].Course)=[Type Course Number:]));
```

D: As-Is Use Cases

USE CASE NAME:	SLC Quarterly Intake Form	ID: USE CASE NUMBER
College Department:	Student Learning Center	Area/Division: Tutoring side (vs. writing side)

Brief Description:	<p>This use case enters data from hard copy intake forms into an Access Database.</p> <p>An intake form is filled out for the first visit to the tutoring center by the student each quarter.</p>
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Special Notes:	Each student manually fills out this form once a quarter
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Revision History

Version	Date	Author	Description of change
1.0	7-19-10	Smb	Originated use case

USE CASE NAME:	SLC Tutoring quarterly student intake form	ID: USE CASE NUMBER
College Department:	Student Learning Center	Area/Division: Tutoring side (vs.writing side)
Primary Actor:	Reception person, (Jeremiah or Lisa fill in occasionally)	
Supporting Actors:	<ol style="list-style-type: none"> 1. Students who come to the tutoring center fill out hard copy quarterly form and sign it. 2. Assistant Director and Department Assistant use the data for reporting and staffing. 	

<p>Brief Description:</p>	<p>This activity enters data (into Access) from hard copy sign-in sheets on the SLC Tutoring utilization by student and subject. It includes a student profile.</p>
<p>Related Use Cases:</p>	<p>This Access DB list of students is compared manually to a hard copy binder that lists Vocational program students who are supported by Federal funds.</p> <p><u>This is required, Federal documentation for funding.</u></p>
<p>Trigger:</p>	<p>SLC Student has filled out a quarterly form</p>
<p>Minimal Guarantees:</p>	<p>1. The student is counted as a user of the SLC Tutor Center whether all details are available or not. Minimal needs from intake form are: Student name Student ID Course in which they are requesting support Whether they are a vocational program student</p>
	<ol style="list-style-type: none"> 1. A completed, hard copy, quarterly form is received from a student and placed in a basket for data entry into Access. 2. Reception opens Access Database (this is an active, adaptable DB and is up-to-date) 3. Access interface displays a form requesting the data items to be entered. (see info req'mts below) 4. Each data item is entered on the Access form. Data comes from the intake form that the student filled out. 5. After the last item is entered on the Access form, the "Next" button on Access is chosen to begin the next student's data entry from the next hardcopy intake form.
<p>Extension:</p>	<ol style="list-style-type: none"> 1. When data on intake form is illegible or incomplete, student info is accessed and verified thru HP3000. 2. After being entered into Access, each student name is checked against a hard copy binder (originated from HP3000 data, received by Director via email) of Vocational program student names to count the number of Vocational students using the SLC

<p>Pre-condition(s) :</p>	<p>Student has legibly filled out a quarterly intake form</p>
<p>Post-condition(s) :</p>	<p>1. Access database can report on how many students utilized tutoring for each subject.</p> <p>2. The student users can be profiled as to subject in which they need tutoring, program enrollment, financial aid status, work status, age range, primary language, disabilities, and the hours/days of the week they desire tutoring support to be available.</p>
<p>Information Requirements:</p>	<ol style="list-style-type: none"> 1. Student ID 2. Student Last name 3. Student First name 4. Email address 5. International student or US citizen or perm resident 6. Primary language: English? Other_____? 7. Subject (class) in which they want tutoring (not all the classes for which they are registered) Choice of: Face-to-Face, Online, Evening, or Hybrid 8. Dates and times of expected need of tutoring 10. Program that student is in: ATA, Certificate, AAS/College Transfer, ABE/GED, CWU, I-Best, EdCAP, Running Start, Adult High School/GED Vocational program status is looked up, not dependent on student knowing) 11. Employment status (FT, PT, not working) 12. Financial aid status (Pell Grant, Scholarship, Work Study,

	<p>Other, None)</p> <p>13. Student age (Teens, 20s, 30s, 40s, 50s, 60+)</p> <p>14. Student disabilities (yes, no, how can we help?_____)</p> <p>15. First generation college student? Yes no</p> <p>16. Ethnic group</p> <p>17. Student signature and printed name (again)</p>
Assumptions:	<ol style="list-style-type: none"> 1. The form is filled out by an eligible EdCC or CWU student. 2. The student name or ID number is sufficiently legible to locate the student in HP3000 to verify demographic data and vocational program status.
Primary Stakeholders:	<p>Director of SLC and Assistant Director use the Access Database</p> <ol style="list-style-type: none"> 1. For quarterly reports to the Dean. 2. to compile the number of vocational students using the center. This provides Federal funding for tutoring. 3. Indirectly used to plan staffing needs for tutoring center. Jeremiah sometimes sees an increase in utilization of previous quarter.
Business Rules:	<p>Federal rules for documentation of Vocational student utilization. Supports a funding source.</p> <p>(EdCC requirements are less stringent than Federal ones.)</p>
Frequency:	<p>Daily (the process goes on throughout the quarter as students fill out a new form each quarter)</p>

Etc: A live receptionist is important because that is the best route for student feedback/concerns.

USE CASE NAME:	SLC Tutoring Daily sign-in	ID: USE CASE NUMBER
College Department:	Student Learning Center	Area/Division: Tutoring side vs. the writing center

Brief Description:	Each visit by student is manually documented by student and manually counted by reception
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Special Notes:	This is an end-to-end manual system to count students who seek tutoring in each subject area
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Revision History

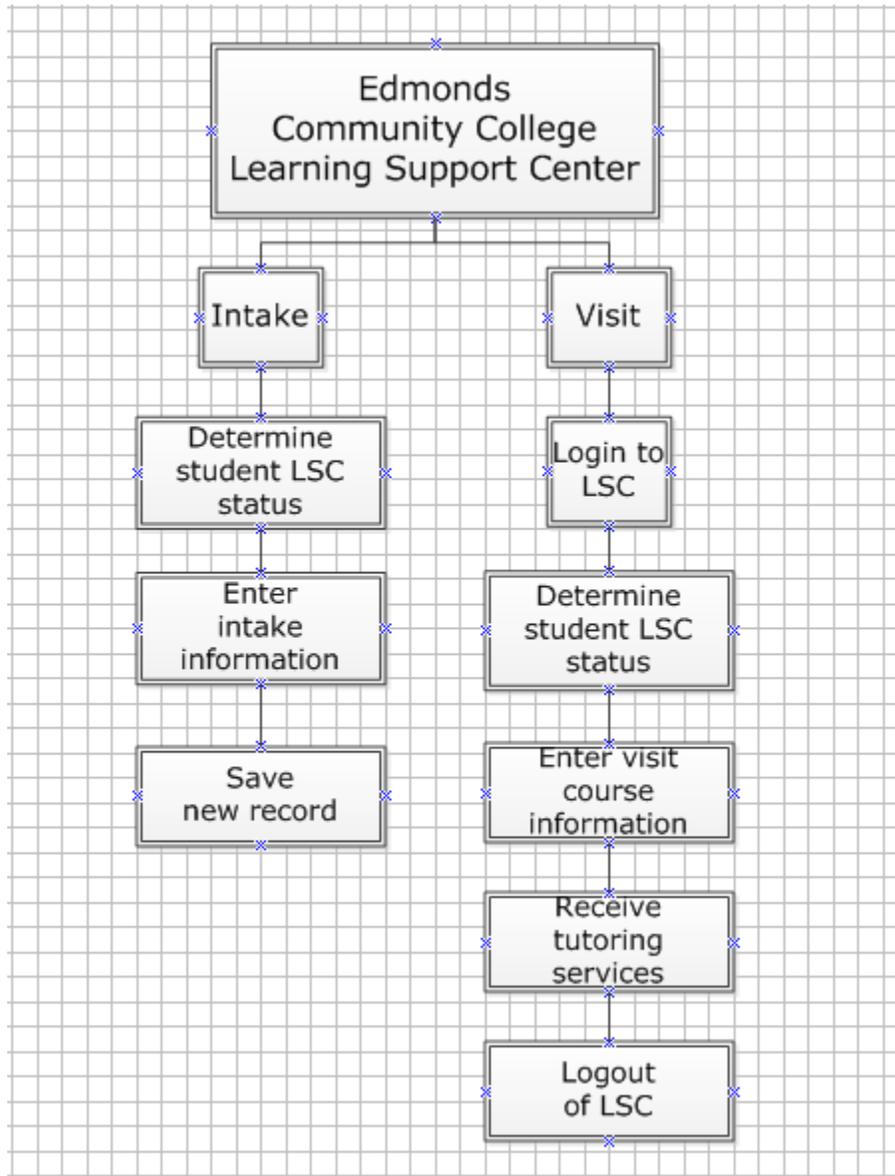
Version	Date	Author	Description of change
1.0	7-19-10	Smb	Originate use case

USE CASE NAME:	SLC Tutoring Daily sign-in	ID: USE CASE NUMBER
College Department:	Student Learning Center	Area/Division: Tutoring side (vs. writing center)
Primary Actor:	Reception compiles data from hard copy sign-in sheets	
Supporting Actors:	Students sign in and out Assistant Director reviews numbers for staffing	
Brief Description:	Hard copy, daily sign in sheets counted and collated for totals	
Related Use Cases:	<ol style="list-style-type: none"> 1. SLC staffing of tutors 2. SLC tally of Vocational program students 	

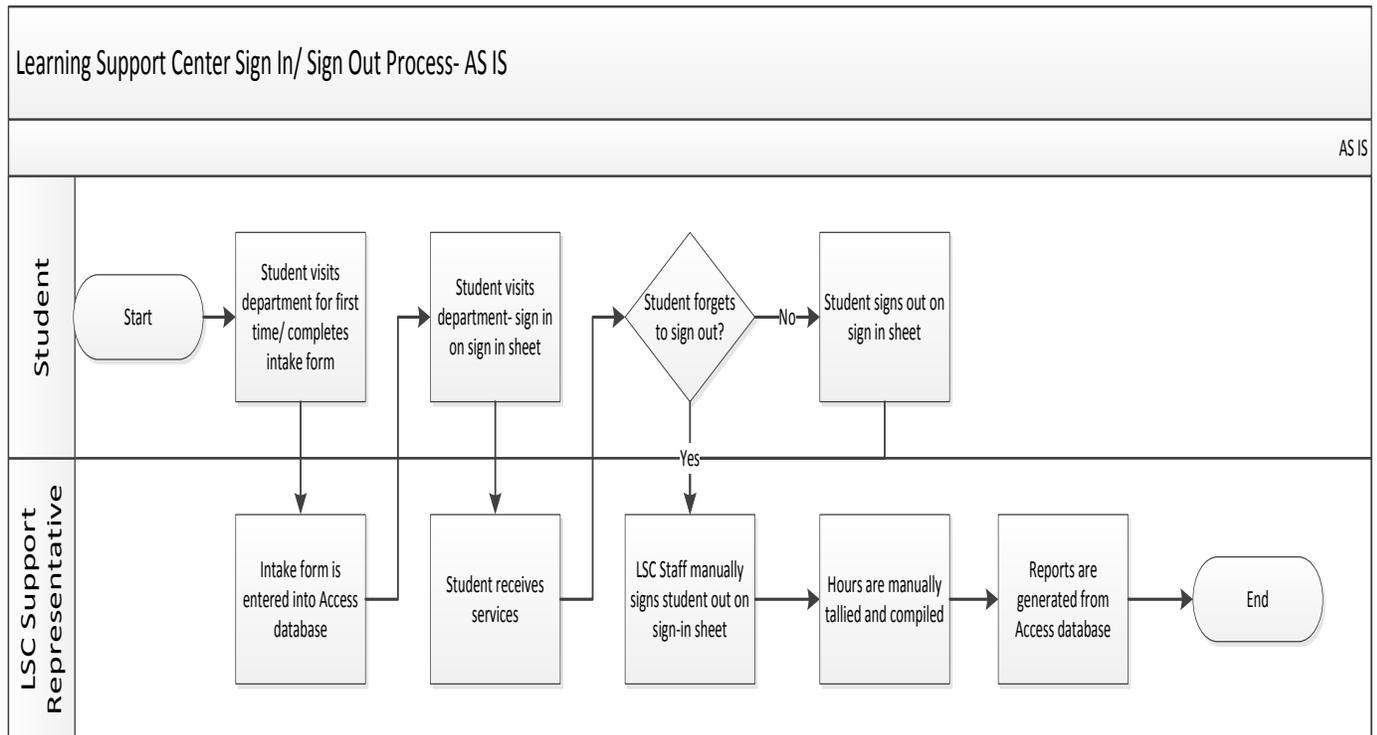
Trigger:	Student arrives at SLC needing support in their learning
Minimal Guarantees:	Documentation received that a student came to center. (Name is not counted if subject is missing from sign-in sheet) Occasionally a student won't sign out so length of center utilization is estimated at an hour.
Flow of Events:	<ol style="list-style-type: none"> 1. Student returns to tutoring center (quarterly form already done) 2. Prints name, time in, and subject in which they need support on a clipboard sheet at reception desk. 3. Prints name, time in, and subject on white board for tutor to see. 4. Receives tutoring. 5. Prints the time they leave the center on clipboard sheet.
Extension:	Student arrives for the first time that quarter to the SLC. See EdCC USE CASE Quarterly form.
Pre-condition(s):	Student has filled out a quarterly form
Post-condition(s):	SLC has a list of student utilization by student name and subject to document daily utilization of center and tutors
Information Requirements:	<ol style="list-style-type: none"> 1. Student name 2. Time in 3. Subject 4. Time out
Assumptions:	<ol style="list-style-type: none"> 1. Student knows enough English to print name and subject and time. 2. Every student will fill out the daily sheet at reception.
Primary Stakeholders:	Assistant Director: to see trends in tutor utilization by subject.
Business Rules:	<ol style="list-style-type: none"> 1. Reports to the Dean, quarterly, on utilization of SLC. 2. Vocational student utilization
Frequency:	Two to three times a week, reception compiles totals from a stack of sign-in sheets.

Etc: Presently, manual tallies of student visits (from sign-in sheets) make it difficult to track trends. For example, SLC is working more closely with instructors this quarter and would like to see what difference that makes in student utilization of SLC.

E: Functional Decomposition Diagram



F: As-Is Swimlane Diagram & Pseudocode



FOR each Student that requires service during the quarter
 Visit the Learning Support Center
 IF the visit is a first-time visit in the quarter **THEN**
 Complete the Intake Form
 Staff enters information from Intake Form into Access Database
 ELSE
 DO LOOP
 The student logs their visit by signing the sign-in sheet
 IF the student forgets to sign out from the visit **THEN**
 The staff signs out students who forget to do so
 ELSE the student signs out on the sign-in sheet
 UNTIL the end of the quarter
 END IF
DO compile the sign-in sheets to total the hours per quarter by the LSC staff

G: Learning Support Center Newsletter

Learning Support Center Newsletter: The Tutorial Center Summer 2011

Number of Students Served AY 2010-11:

4,423 students used the Learning Support Center for a total of 26,550 hours of academic assistance.

2,695 students used the Tutorial Center for a total of 19,834 hours

Most Requested Math Courses:

Math 90	327
Math 80	262
Math 141	219
Math 60	161
Math 146	127
Math 151	92

Most Requested Subjects:

Math	1597
BSTEC	218
Chemistry	190
ACCT	179
Black Board Support	152
Philosophy	95

Saturday tutoring for Math and BSTEC:

176 students used the Center on Saturdays for a total of 520 hours.

Math Tutor Returns After Earning His Bachelor's Degree in Math Education:

Rylan Yee worked in the Learning Support Center Fall 2008 through Spring 2009. This Summer Quarter 2011, Rylan returned to the Center to once again work as a tutor. Rylan sat down with Jeremiah Roland, Assistant Director of the Learning Support Center, for a brief interview about Rylan's experience as a tutor and how working as a math tutor in the LSC helped him choose to get his bachelor's degree in Math Education.

JR- After completing your transfer degree Spring 2009, what University did you transfer to?

RY- I transferred to Humboldt State University in CA. It's near Eureka in the Arcata area.

JR-What degree did you pursue there?

RY-I pursued a degree in Math Education. I got a Bachelor of Arts.

JR-Did your time as tutor in the Center affect your degree choice?

RY-Absolutely. Tutoring let me know that people really don't look at problems the same way necessarily as you might, so knowing a lot of different avenues to show how those things match up or work out is good. I felt that the Math Education degree would give me better insight in a lot of the basic mechanics of mathematics. Understanding the small things deeply gives you a really good understanding of all mathematics.

JR-Did working in the Center help you in your pursuit of your degree?

RY-Definitely, especially since my degree was in Math Education, there were a lot of classes that required me to go in front of the class. It would be a small group of like ten students, and it would require showing a proof that you had done or leading a lesson for the class as if you were going to teach a high school lesson. Tutoring prepared me for that.

JR-Did what you gain from your B.A. in Math Education change the way you tutor? Did you change the way you approach a tutoring session?

RY-Yes. I use more set-up language when I talk to students about material. I talk to them about what they've done and where they are going, not only what they are doing right then.

JR-What's your next step?

RY-My next step is to hopefully pursue a teaching credential program and become a teacher at the high school level. I'm thinking about Central Washington University.

Math 90 Workshops: Facilitated by Richard Davis

107 students participated in Richard's interactive Math 90 Workshops for a total of **362** hours.

Tutors Transfer to 4-Year Colleges:

Congratulations to These Tutors Who Are Achieving Their Educational Goals!

Nora Kayser	University of Nice Sophia Antipolis
Crystal Mortensen	University of Washington, Psychology
Helen Jones	University of Washington, Psychology
Ngan Nguyen	University of Washington, Computer Science
Jacqueline Sy	University of California, Communications
Adrian Widjaja	University of Minnesota, Chemical Engineering
Tariq Yusuf	University of Washington, Computer Engineering

We wish all these peer assistants the best as they begin their upper division classes.

Blackboard Support for Students New to Online Classes and Blackboard:

Over the 2010-11 academic year, **170** students requested assistance specifically for blackboard. Additionally, many more students received help with Blackboard while receiving assistance with courses they were working on in the Center.

The Learning Support Center helps students each quarter who are new to taking Online and Hybrid classes with the tools and knowledge they need to navigate Blackboard. "What's a discussion Board?", "How do I attach my work?", and "I can't find the sidebar on Blackboard!" are just some of the issues tutors are ready to help out with.

Recognizing ASEDCC's Support for the Learning Support Center:

The Learning Support Center says "thanks" to everyone in Student Government for allocating funds to the Center for AY 2011-12. In this time of economic uncertainty, the funding from Student Government plays a key role in providing this academic support service. Thanks in advance from the approximately 4400 students who will receive help in the Center this coming year.

Thanks to EdCC Foundation:

Everyone in the Learning Support Center wants to say "thanks" to EdCC Foundation for giving the Center a grant for AY 2010-11, so we can continue to offer academic support to students and keep up with the increased number of students using the Learning Center

Jeremiah Roland, Assistant Director
Learning Support Center
Edmonds Community College
[425-640-1045](tel:425-640-1045)

H: Information Commonality/Variability Matrix

LSC
Time In
First Name
Last Name
Subject
Time Out
Total
LSC Use
Total Visits
Total Hours
Page

START
Student Name
Email Address
Problem

Testing Center- Online/Makeup
No.
Test Date
Test Time
Name
Class/ Course
Instructor
Test Returned/ Date/ CM/ PU
End Time
Seat #

SSD
#
Date
Print Name
Time In
Time Out
Computer Use
Study- Math
Study- Other
Testing- Online
Testing- Other
Tutoring- Tutor
Tutoring- Student
Meeting

Testing Center- Stanford Reading Test
Names
Test Date
Score- Stanford- Actual Score
Score- Stanford- Grade Equiv.
Score- Essay- Topic
Score- Accuplacer- Test Date
Score- Accuplacer- Reading Skills
Score- Accuplacer- Writing Skills
Class Placement

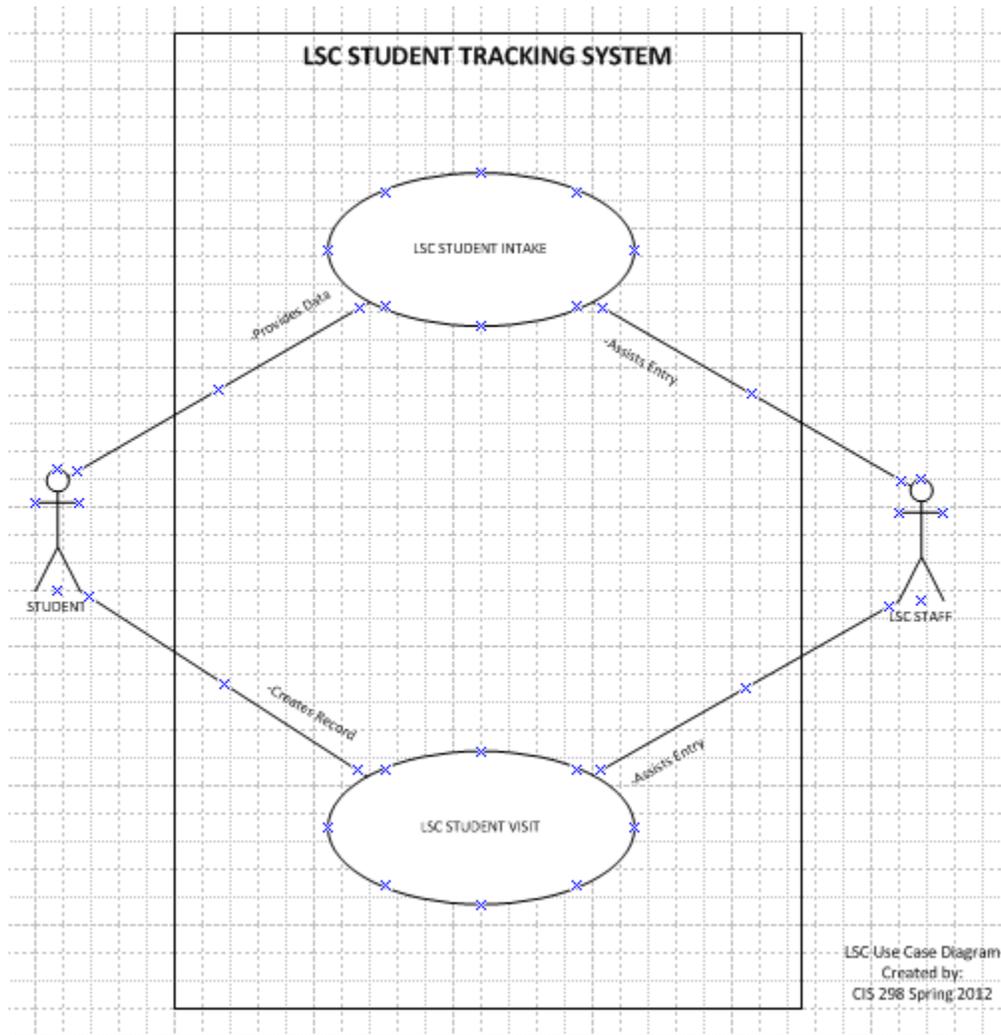
Testing Center- LOEP/ SLEP/ ESL Log
No.
Name
Test Type
Test Results- LU or Grmr
Test Results-Rdg.
Test Results-SM or Total
Essay- Topic Ltr or No.
Date Taken
Class Placement

Key:
Time In
Name
Subject
Time Out
ID number
Calculated Field

Testing Center- Correspondence Testing
Student's Name
Sending University and Test Title
Date Received
Actual Test Date/ Time Limit
Date & Time Taken
Misc. PD/ Faxed/ Mailed

Testing Center- GED Testing
No.
Seat
Name
N/R
Subject
Time Period

I: To-Be Use Case Diagram & Use Cases



USE CASE NAME:	LSC Student Intake	ID: UC001
Primary Actor:	Student	
Brief Description:	This use case describes the steps taken from the time the student first elects to use LSC services, through the intake information process; until a new student record is created in the LSC’s tracking system.	
Trigger:	Student (or other user) is requesting LSC tutoring services	

Related Use Cases:	None.
Normal Flow of Events:	<p>This use case begins when a student comes into the LSC for the first time to sign up for tutoring services:</p> <ol style="list-style-type: none"> 1. System determines student's LSC status. 2. Student enters student intake information into the system. 3. Student saves new record into the system. <p>This use case ends when the student information has been entered into the system and a new student record is created.</p>
Exceptions:	<p>#2: If a student requests services for a Department and/or course for which there are no tutoring services available, then, the student's information is still entered into the system.</p> <p>#2: If a student requests services for a new department and/or course, then a new department and/or course record will need to be created in the appropriate database table before the new student record can be successfully created.</p>
Pre-condition(s):	A student exists that is seeking LSC tutoring services for the first time.
Post-condition(s):	A new record has been created for the student requesting LSC tutoring services for the first time.
Information Requirements:	<p>Student ID Number Current Date Last Name First Name Alternative Name (student choice) Student email Student Language Student Program(s) Student Professional Track Department(s) (that course is under) Course Number(s) (that student wants help with) Day of week Period of day</p>

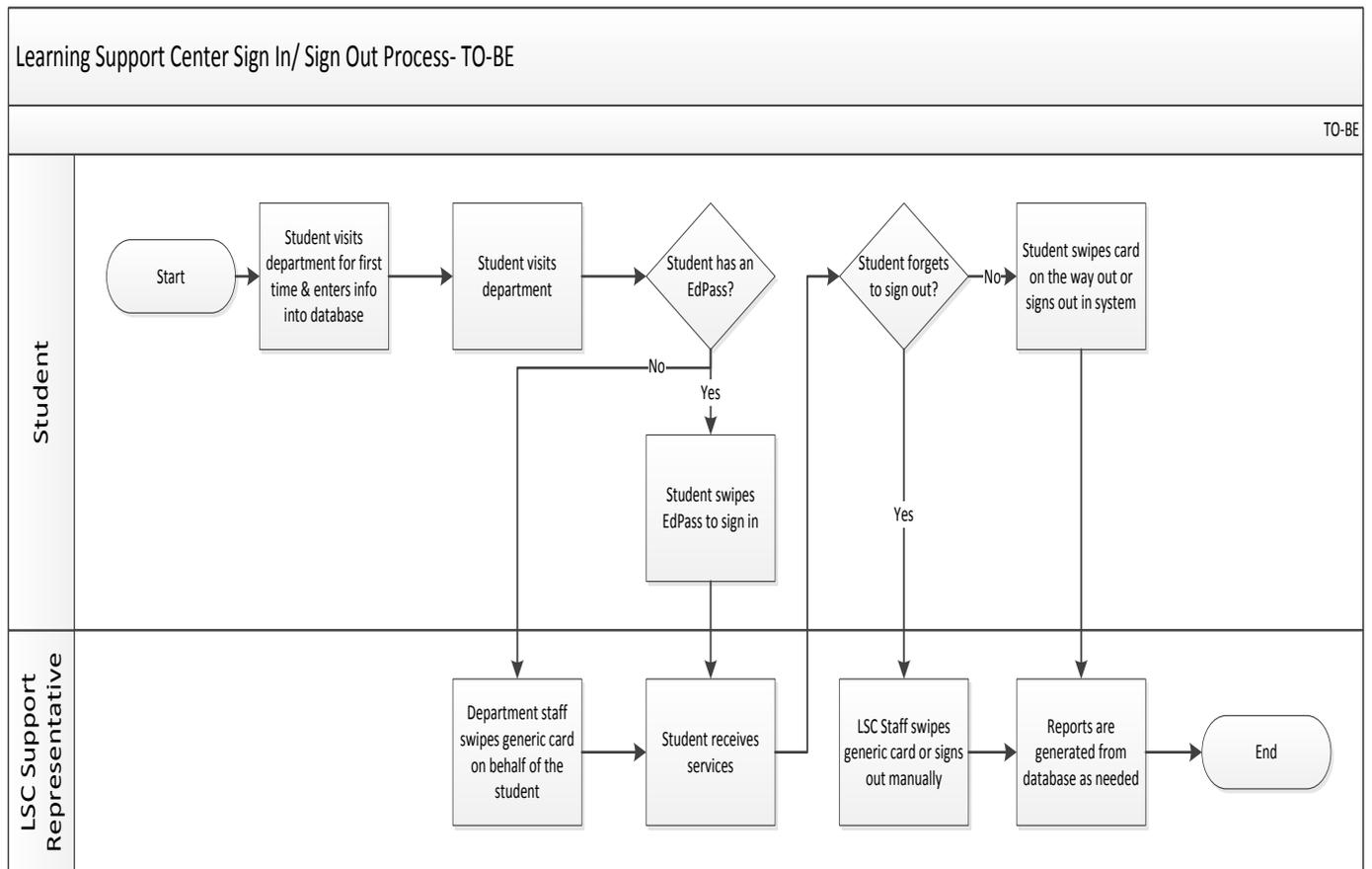
Assumptions:	<ul style="list-style-type: none"> • If student doesn't have a valid EdCC student ID #, then a generic default number is used. • If all required information cannot be determined, then default values will appear and the record will be saved with a status set to "INCOMPLETE". • A quarterly new database will no longer need to be created. • Students will not be required to complete an intake form every quarter. • LSC staff expects that students will be able to enter their own intake information into the system.
Business Rules:	<ul style="list-style-type: none"> • Students don't need an EdCC student ID# if they are CWU students seeking tutoring services. • English doesn't need to be the student's first language. • Students can be enrolled in more than one program, degree, and course at a time. • EdCC student ID numbers don't need to start with a "95..." • Students may receive tutoring help for more than one course per visit. • Students may receive tutoring help on multiple days and multiple time periods.

USE CASE NAME:	LSC Student Visit	ID: UC002
Primary Actor:	Student User	
Brief Description:	This use case describes the steps taken from the time the student enters the LSC for tutoring services until they are checked out and their visit record has been updated in LSC tracking system.	
Trigger:	Student (or other user) needs LSC tutoring services	
Related Use Cases:	None	
Normal Flow of Events:	<p>This use case begins when a student comes into the LSC after the initial intake process to receive tutoring services:</p> <p>4. Student logs into the LSC tracking system using their</p>	

	<p>student ID card.</p> <ol style="list-style-type: none"> 5. The system will validate that the student exists in the system. 6. Student provides specific course information for the visit. 7. Student receives tutoring services. 8. Student logs out of the LSC tracking system when finished. <p>This use case ends when the student’s arrival and departure information for a new visit has been captured and a new visit record is created in the system.</p>
<p>Exceptions:</p>	<p>#1: If the student doesn’t have a valid EdCC student ID, then the student will need to manually enter their visit information.</p> <p>#1: If a student arrives without their student ID card, then the student will need to manually login into the LSC tracking system.</p> <p>#1: If the LSC tracking system is not functioning, then the student will login & out manually on a paper form (to be input by LSC staff at a later time).</p> <p>#2: If a student doesn’t exist in the LSC tracking system, then the student will need to complete the intake process (see UC001).</p> <p>#3: If a student requests a course for which they have not previously registered, then that course will need to be added to the student’s permanent tracking record.</p> <p>#5: If a student fails to remember to logout, then either LSC staff will log them out OR the system will choose an appropriate logout time for that visit record.</p>
<p>Pre-condition(s):</p>	<p>A student exists that is seeking LSC tutoring services after the initial intake process.</p>
<p>Post-condition(s):</p>	<p>A new visit record has been created for the student requesting LSC tutoring service.</p>
<p>Information Requirements:</p>	<p>Student ID Number Current Date Last Name First Name Course Number/Subject(s) (that student wants help with) Visit Time In Visit Time Out</p>

	LSC Use Code
Assumptions:	<ul style="list-style-type: none"> • If student doesn't have a valid EdCC student ID #, then a generic default number is used. • The system will need to provide a method by which the student can login without having a present student ID card. • The system will need to allow a method by which CWU or other affiliated educational organizations can create visit records. • The currently used manual visit form will need to be retained so that it can be used as a manual backup in the case of a system malfunction or outage. • The system will need to allow additional courses and departments to be added to the student record. • The system will have to allow a student to be manually (without the use of a student ID card) logged out by LSC staff. • The system will need to update the student's logout time automatically without human intervention at some point if either the student or the LSC staff fails to log the student out at the end of their visit.
Business Rules:	<ul style="list-style-type: none"> • Students don't need an EdCC student ID# if they are CWU students seeking tutoring services. • Students may receive tutoring help for more than one course per visit. • Every student must login and logout for each visit. • Students may make multiple visits for tutoring services in a single day. • Information about tutor's schedules is not tracked. • Information as to which tutors help which students is not tracked. • Currently, students are not asked for their student ID number when visiting the LSC for tutoring services. • Students are tracked by type (T for technical/vocational and A for transfer). "A" is currently the default. It can be left blank if the student doesn't know.

J: To-Be Swimlane Diagram & Pseudocode



FOR all Students that require service during the quarter

Visit the Learning Support Center

DO LOOP

IF the visit is a first-time visit in the quarter **THEN**

Student completes the automated intake process

END IF

IF the student has an EdPass **THEN**

The student signs in by scanning their EdPass

ELSE The LSC Staff swipes a generic card to sign the student in

END IF

The student receives tutoring service

IF the student has an EdPass **THEN**

The student signs out by scanning their EdPass

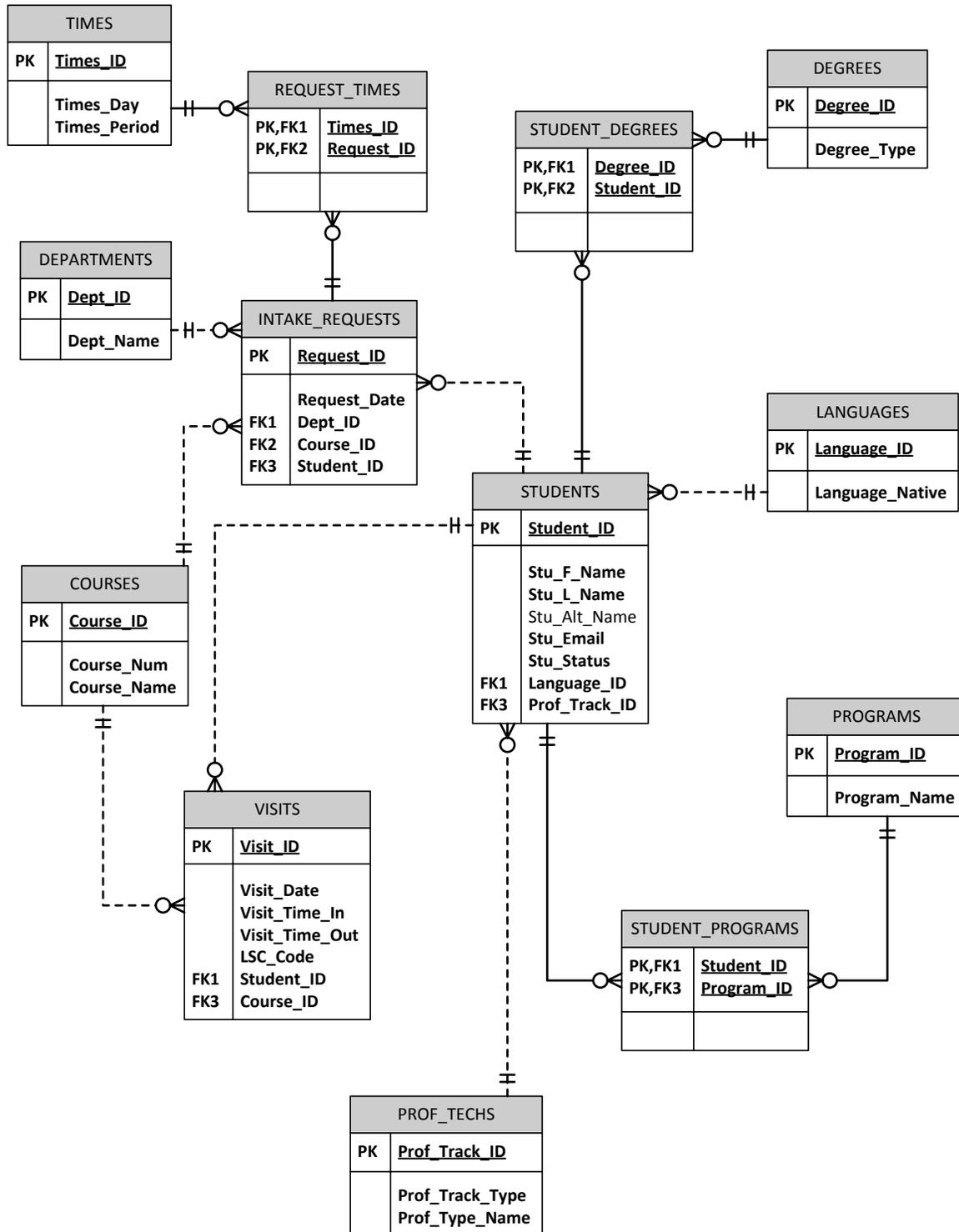
ELSE The LSC Staff swipes a generic card to sign the student out

END IF

UNTIL the end of the quarter

DO run automated reports to analyze student usage of the LSC

K: Entity Relationship Diagram



L: Metadata Dictionary

ENTITY NAME	ATTRIBUTE NAME	DEFINITION	DOMAIN CONSTRAINTS	REFERENTIAL INTEGRITY CONSTRAINTS
COURSES	<u>Course_ID</u>	The unique identifier assigned by the college for each course.	Numeric (10), System Assigned, Unique	PK (Primary Key)
	Course_Num	The number of the course.	Numeric (20), Required, Unique, Valid values include: CIS 233, MATH 090, BSTEC 224, etc.	
	Course_Name	The name of the course.	Text (20), Required, Non-unique, Valid values include: Systems Analysis, Intermediate Algebra, Spreadsheet (Excel) etc.	
DEGREES	<u>Degree_ID</u>	The unique identifier assigned by the college for each degree.	Numeric (10), System Assigned, Unique	PK (Primary Key)
	Degree_Type	The type of degree.	Text (20), Required, Non-unique, Valid Values include: AAS Transfer, ABE, GED, ATA etc.	
DEPARTMENTS	<u>Dept_ID</u>	The unique identifier assigned by the college for each department.	Numeric (10), System Assigned, Unique	PK (Primary Key)
	Dept_Name	The name of the department.	Text (20), Required, Non-unique, Valid Values include: Computer Information Systems, Math, Business Information Technology etc.	
INTAKE_REQUESTS	<u>Request_ID</u>	The unique identifier assigned by the college to each individual request.	Numeric (10), System Assigned, Unique	PK (Primary Key)
	Request_Date	The date of the request.	Date (6), Required, Non-unique,	

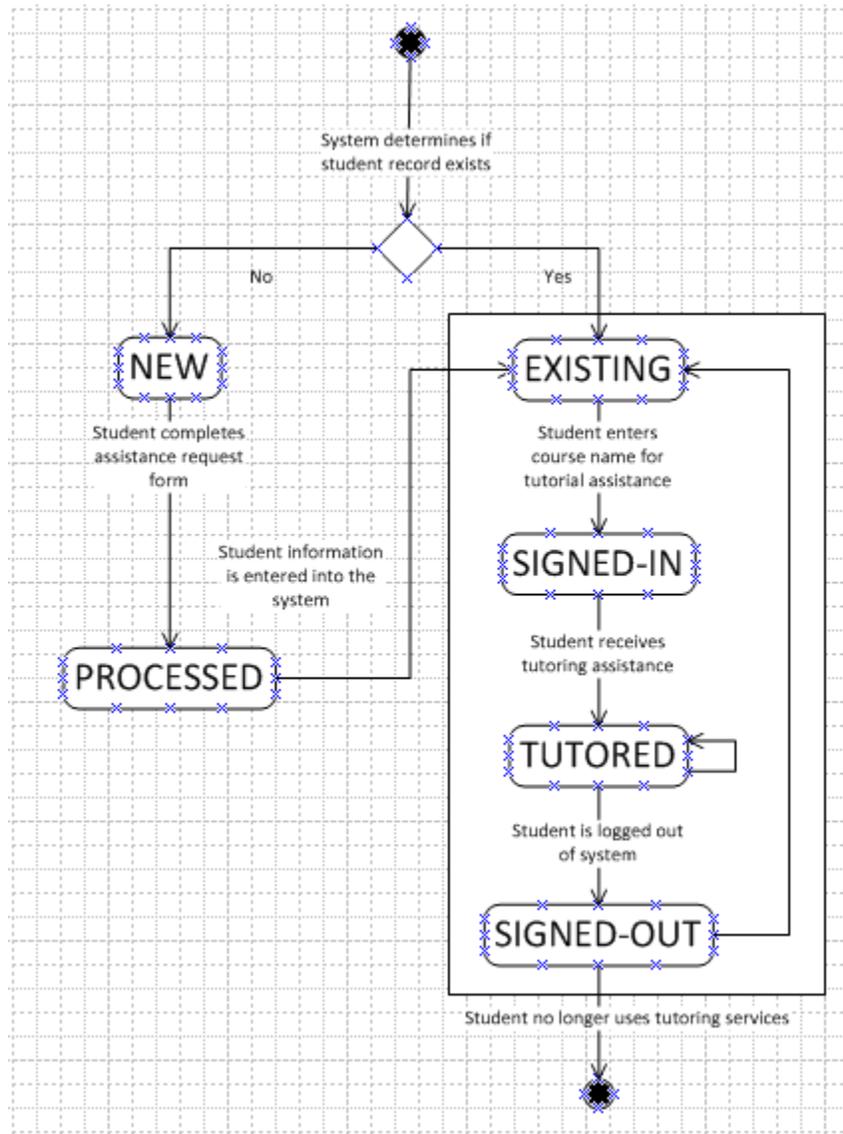
			InputMask: mm/dd/yy	
	<u>Dept_ID</u>	The unique identifier assigned by the college for each department.	FK (DEPARTMENTS) Required, Non-unique	An INTAKE_REQUEST record cannot exist without a related DEPARTMENT record.
	<u>Course_ID</u>	The unique identifier assigned by the college for each course.	FK (COURSES) Required, Non-unique	An INTAKE_REQUEST record cannot exist without a related COURSE record.
	<u>Student_ID</u>	The unique identifier assigned by the college for each student.	FK (STUDENTS) Required, Non-unique	An INTAKE_REQUEST record cannot exist without a related STUDENT record.
LANGAGES	<u>Language_ID</u>	The unique identifier assigned by the college for each language.	Numeric (10), System Assigned, Unique	PK (Primary Key)
	Language_Native	The native language of the student.	Text (20), Required, Non-unique, Valid values include: English, Chinese, Japanese etc.	
PROF_TECH S	<u>Prof_Track_ID</u>	The unique identifier assigned by the college for each prof track.	Numeric (10), System Assigned, Unique	PK (Primary Key)
	Prof_Track_Type	The type of prof_track.	Text (5), Required, Unique, Valid Values: ATA, CERT, COC.	
	Prof_Track_Name	The name of prof_track.	Memo, Optional	
PROGRAMS	<u>Program_ID</u>	The unique identifier assigned by the college for each program.	Numeric (10), System Assigned, Unique	PK (Primary Key)
	Program_Name	The name of the program.	Text (25), Required, Unique, Valid Values include: IBEST, Running Start, EdCap,etc.)	

REQUEST_ TIMES	<u>Times_ID</u>	The unique identifier assigned by the college for each time.	FK (TIMES) Required, Non-unique	CPK (Composite Primary Key) A REQUEST_TIME record cannot exist without a related TIME record CPK (Composite Primary Key) A REQUEST_TIME record cannot exist without a related REQUEST record
	<u>Request_ID</u>	The unique identifier assigned by the college to each individual request.	FK (INTAKE_REQUESTS) Required, Non-unique	
STUDENT_ DEGREES	<u>Degree_ID</u>	The unique identifier assigned by the college for each degree.	FK (DEGREES) Required, Non-unique	CPK (Composite Primary Key) A STUDENT_DEGREE record cannot exist without a related DEGREE record CPK (Composite Primary Key) A STUDENT_DEGREE record cannot exist without a related STUDENT record
	<u>Student_ID</u>	The unique identifier assigned by the college for each student.	FK (STUDENTS) Required, Non-unique	
STUDENT_ PROGRAMS	<u>Student_ID</u>	The unique identifier assigned by the college for each student.	FK (STUDENTS) Required, Non-unique	CPK (Composite Primary Key) A STUDENT_PROGRAM record cannot exist without a related STUDENT record CPK (Composite Primary Key) A STUDENT_PROGRAM record cannot exist without a related PROGRAM record
	<u>Program_ID</u>	The unique identifier assigned by the college for each program.	FK (PROGRAMS) Required, Non-unique	
STUDENTS	<u>Student_ID</u>	The unique identifier assigned by the college for each student.	Numeric (9), System Assigned, Unique	
	Stu_F_Name	The student's first name.	Text (20), Required, Non-unique, Valid values include: Suzanne, Timothy, Robert, etc	

	Stu_L_Name	The student's last name	Text (20), Required, Non-unique, Valid values include: Anderson, Williams, Smith, etc	
	Stu_Alt_Name	The student's alternate name.	Text (20), Required, Non-unique, Valid values include: Sue, Tim, Bobby, etc	
	Stu_Email	The student's email address.	Text (35), Required, Non-unique, Valid values include: S.Anderson@gmail.com, Tim.Williams@edmail.edcc.edu, rsmith12345@hotmail.com, etc	
	Stu_Status	The students status.	Text (20), Required, Non-unique, Valid values include: new, active, archived, etc	
	<u>Language_ID</u>	The unique identifier assigned by the college for each language.	FK (LANGUAGES) Required, Non-Unique	A STUDENT record cannot exist without a related LANGUAGE record
	<u>Prof_Track_ID</u>	The unique identifier assigned by the college for each prof_track.	FK (PROF_TECH) Required, Non-unique	A STUDENT record cannot exist without a related PROF-TECH record
	-			
TIMES	<u>Times_ID</u>	The unique identifier assigned by the college for each time.	Numeric (10), System Assigned, Unique	
	Times_Day	The name of the day.	Text (10), Required, Unique, Lookup, TimesDay = Monday, Tuesday, Wednesday, Thursday, Friday, Saturday	
	Times_Period	The time period.	Text (11), Required, Unique, Lookup, TimesPeriod = 8:30-9:30, 9:30-10:30, 10:30-11:30, 11:30-12:30, 12:30-1:40, 1:40-2:50, 2:50-4:00, 4:00-5:00, 5:00-6:00	

Field Name	Description	Data Type	Constraints	Relationships
<u>Visit_ID</u>	The unique identifier assigned by the college to each visit.	Numeric (10), System Assigned, Unique		
Visit_Date	The date of the visit.	Date (6), Required, Non-unique, InputMask: mm/dd/yy		
Visit_Time_In	The time the student logs into the system	Time (4), Required, Non-unique, InputMask: hh:mm		
Visit_Time_Out	The time the student logs out of the system	Time (4), Required, Non-unique, InputMask: hh:mm		
LSC_Code	The code identifying type of student.	Text (10), Required, Non-unique, Lookup, LSCCode = Vocational, Transfer		
<u>Student_ID</u>	The unique identifier assigned by the college for each student.	FK (STUDENTS) Required, Unique		A VISIT record cannot exist without a STUDENT record.
<u>Course_ID</u>	The unique identifier assigned by the college for each course.	FK (COURSES) Required, Unique		A VISIT record cannot exist without a COURSE record.

M: To-Be State Transition Diagram



N: Requirements Catalog

REQUIREMENTS CATALOG

UC001 STUDENT INTAKE

- 1.1. The system must be able to determine whether the student record exists in the system
- 1.2. The system must be able to allow a new student record to be created
 - 1.2.1. The system must accept a valid student ID number
 - 1.2.2. The system must be able to accept the current date
 - 1.2.3. The system must be able to accept the student's last name
 - 1.2.4. The system must be able to accept the student first name
 - 1.2.5. The system must be able to accept student's alternative name
 - 1.2.6. The system must be able to accept the student's email address
 - 1.2.7. The system must be able to allow the user to choose the student's first language
 - 1.2.8. The system must be able to allow the user to choose which program(s) the student is pursuing
 - 1.2.9. The system must be able to allow the user to choose which professional track(s) the student is pursuing
 - 1.2.10. The system must be able to allow the user to choose which course department for which the student is requesting assistance
 - 1.2.11. The system must be able to allow the user to select the day(s) of week for which the student is requesting assistance
 - 1.2.12. The system must be able to allow the user to select the day(s) of week for which the student is requesting assistance
 - 1.2.13. The system must be able to allow the user to select the time period(s) of the day for which the student is requesting assistance

UC002 STUDENT VISIT

- 1.1. The system must be able to capture information from a student's ID card
- 1.2. The system must be able to allow the user to manually enter their student ID number

- 1.3. The system must be able to determine whether the student's record exists in the system
- 1.4. The system must be able to populate information gathered when student information is provided
 - 1.4.1. The system must be able to provide the student's ID #
 - 1.4.2. The system must be able to provide the student's last name
 - 1.4.3. The system must be able to provide the student first name
 - 1.4.4. The system must be able to provide the course number(s)/subject(s) for which the student is enrolled
- 1.5. The system must be able to allow the user to choose the course(s) for which they are requesting assistance (from list provided in #1.1.4.4 above)
- 1.6. The system must be able to assign the current date when a student signs in
- 1.7. The system must be able to capture the time a student logs in
- 1.8. The system must be able to capture the time a student logs out
- 1.9. The system must allow an LSC staff member to update records for those students who forgot to log out
- 1.10. The system must be capable of automatically logging out students at pre-determined times or intervals (if no logout time is entered in visit record)

OUTPUT FUNCTIONALITY

- 1.1. The system must be capable of calculating the total time a student used the LSC tutoring services during a specific visit.
- 1.2. The system must be capable of calculating the total number of student visits for any specified period of time. (i.e. 1 day, week, month, etc.)
- 1.3. The system must be capable of calculating the total number of hours for all student visits for a specific period of time. (i.e. 1 day, week, month, etc.)
- 1.4. The system must be capable of calculating the total number of students by course

O: Outstanding Issues & Assumptions

ISSUES: We were unable to contact Jeremiah Roland to get these last minute questions answered:

- Is the “LSC use code” documented on every login and if entered in the system, where is it stored?
- The current system has a single text field to keep track of the hours a student would most likely use the LSC. Does Jeremiah want to continue to use a text field or does he want the ability to track specific time blocks?

ASSUMPTIONS:

- We decided that the time block in the above issue should be created in a separate table in the database so that better tracking capabilities would exist.