

In this assignment, you are looking at the structure of our example / assignment database and answering some requests about the database:

Part I (10 points)

This portion of the assignment is to familiarize you with the structure of the assignment database (tennis). For each of the fields in a table, you will need to look at how the table was created and the definitions given for each field. You should look at the CREATE TABLE statements from assignment #2. Each CREATE TABLE statement will fill in the information required within Part I of this assignment. For instance, if a field says “NOT NULL” than the field is required; therefore the Required Y/N column would be “Y”.

Table: **PLAYERS**

Column Name	Data Type	Required Y/N
PLAYERNO	Integer	Y
NAME	CHAR	Y
INITIALS	CHAR	Y
BIRTH_DATE	DATE	N
SEX	CHAR	Y
JOINED	SMALLINT	Y
STREET	VARCHAR	Y
HOUSENO	CHAR	N
POSTCODE	CHAR	N
TOWN	VARCHAR	Y
PHONE	CHAR	N
LEAGUENO	CHAR	N

Table: **TEAMS**

Column Name	Data Type	Required Y/N
TEAMNO	INTEGER	Y
PLAYERNO	INTEGER	Y
DIVISION	CHAR	Y

Table: **MATCHES**

Column Name	Data Type	Required Y/N
MATCHNO	INTEGER	Y
TEAMNO	INTEGER	Y
PLAYERNO	INTEGER	Y
WON	SMALLINT	Y
LOST	SMALLINT	Y

Table: **PENALTIES**

Column Name	Data Type	Required Y/N
PAYMENTNO	INTEGER	Y
PLAYERNO	INTEGER	Y
PAYMENT_DATE	DATE	Y
AMOUNT	DECIMAL	Y

Table: **COMMITTEE MEMBERS**

Column Name	Data Type	Required Y/N
PLAYERNO	INTEGER	Y
BEGIN_DATE	DATE	Y

END_DATE	DATE	N
POSITION	CHAR	N

Part II (30 Points)

In this assignment you will be requested to create a series of SQL statements by your boss. In the real world: your boss isn't going to ask you "Would you SELECT name, initials, houseno, street, town, postcode FROM players WHERE town = 'Stratford';". Instead, the request would be worded something like "The Robert Parmenters' are having a barbeque this weekend and wanted to invite all the members that are living in Stratford. They need the members' name, initials, and address. Please include the post code, too."

So, how would I approach the request? I'd start by dissecting the statement.

First, I'd look at what fields are needed to fulfill the request. They are:

name, initials, houseno, street, town, postcode

Second, what table is or are required to find the requested information?

Players

Third, are there any special conditions or restrictions placed upon the request?

Only players or members from Stratford.

Now I can assemble my SQL statement.

```
SELECT    name, initials, houseno, street, town, postcode
FROM      players
WHERE     town = 'Stratford';
```

Request 1. Would you provide me with a list of all the players that have had penalties? I need the player numbers, the date the payment was made, and the amount.

Place your SQL statement here.

```
SELECT    PLAYERNO, PAYMENT_DATE, AMOUNT
FROM      PENALTIES;
```

Request 2. We've just received an invitation to a new tennis tournament. Would you send copies of this invitation to the team captains? I need to know the name, initials, and addresses of the team captains.

Place your SQL statement here.

```
SELECT    NAME, INITIALS, HOUSENO, STREET, TOWN, POSTCODE
FROM      TEAMS, PLAYERS
WHERE     TEAMS.PLAYERNO = PLAYERS.PLAYERNO;
```

Request 3. What members have served as chairman of the committees? Would you provide me with their player number, name, and the dates that they have served as chairman?

Place your SQL statement here.

```
SELECT    PLAYERNO, NAME, BEGIN_DATE, END_DATE
FROM      PLAYERS, COMMITTEE MEMBERS
WHERE     COMMITTEE MEMBERS.PLAYERNO = PLAYERS.PLAYERNO
AND      POSITION = 'CHAIRMAN';
```

What to turn in:

- This Microsoft Word document with your completed tables from Part I and your SQL statements from Part II.
- Suggestion: Create your SQL statements in your preferred software and copy the statement directly into this document.

Assignment 4 - Where and aggregate functions

Bruce Norman

Attached Files: •  [Assignment4Winter2011.docx](#) (15.355 KB)

Your employer has come to you and asked you to extract the following information from your database. Because an employer would never request information like “SELECT * FROM players”, this week’s assignment is in the form of English language requests (or story problems).

Instructions: You should create your SQL statements that meet the request from your employer. Each request (story problem) below has two parts:

a. You should create your statements in your RDBMS, and then copy your typed SQL statements to this document.

b. Report here the number of records that you returned from your database.

1. I need to send invitations to all the players that live in Stratford and Eltham to a special tournament. Can you provide me with a list of the players’ names, including their initials, their house number and street as “address”, the city, and postcode.

a. (SQL statement)

```
SELECT    name, initials, CONCAT (housetno, ' ', street) AS address, town, postcode
FROM      players
WHERE     town IN ('stratford', 'eltham')
ORDER BY  name;
```

b. (Number of records) = 9

name *	initials *	address	town *	postcode
Bishop	D	78 Eaton Square	Stratford	9629CD
Brown	M	16 Edgecombe Way	Stratford	4377CB
Collins	DD	804 Long Drive	Eltham	8457DK
Everett	R	43 Stoney Road	Stratford	3575NH
Hope	PK	16A Magdalene Road	Stratford	1812UP
▶ Moorman	D	65 Stout Street	Eltham	9437AO
Parmenter	R	80 Haseltine Lane	Stratford	1234KK
Parmenter	P	80 Haseltine Lane	Stratford	64945G
Wise	GWS	39 Edgecombe Way	Stratford	9758VB

2. I need the name of those individuals that are currently serving as committee members for the tennis club.

a. (SQL statement)

```
SELECT    name
FROM      players, committee_members
WHERE     players.PLAYERNO = committee_members.PLAYERNO
         AND    end_date IS NULL
ORDER BY  name;
```

b. (Number of records) = 5

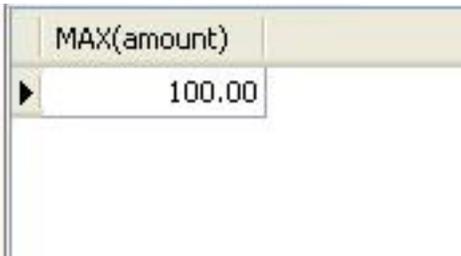
name *
▶ Bailey
Everett
Miller
Newcastle
Parmenter

3. *What is the highest single amount that has been paid in penalties?*

a. *(SQL statement)*

```
SELECT    MAX(amount)
FROM      penalties;
```

b. *(Number of records) = 1*



MAX(amount)
100.00

4. *What is the average amount that has been paid in penalties?*

a. *(SQL Statement)*

```
SELECT    AVG(amount)
FROM      penalties;
```

b. *(Number of Records) = 1*



AVG(amount)
60.000000

5. *What is the smallest amount paid in penalties?*

a. *(SQL Statement)*

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SELECT MIN(amount)

FROM penalties;

b. (Number of Records) = 1

MIN(amount)
25.00

6. Don't we have two brothers in the tennis club? The brothers that I'm thinking about have a name like Parameter? I know that's not quite right, but I'm sure it begins with 'Par'. Can you give me their real last name and the town's they live in?

a. (SQL Statement)

SELECT name, town

FROM players

WHERE name LIKE 'par%';

b. (Number of records) = 2

name *	town *
Parmenter	Stratford
Parmenter	Stratford

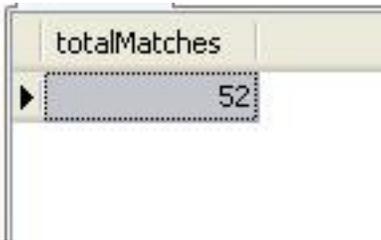
7. I know that if we add all the wins and losses that our players have played, we'd be able to determine the total number of matches that have been played by players. What is that total?

a. (SQL Statement)

SELECT SUM(won) + SUM(lost) AS totalMatches

FROM Matches;

b. (Number of records) = 1



totalMatches
52

8. Can you tell me the number of players that we have as members?

a. (SQL Statement)

```
SELECT COUNT(Playerno) AS totalPlayers  
FROM Players;
```

b. (Number of records) = 14



totalPlayers *
14

Turn in:

Return to the link below and turn in this document with your completed answers to all the requests above. Be sure to include your name!

Student Name Bruce Norman

Create the following SQL SELECT statements. If you have added, deleted or changed records within your studies, you will need to create clean database. You will need to drop tennis and reconstruct it from the original instructions in chapter 3 and 4.

While many of these statements might be able to be created without GROUP BY, HAVING, or ORDER BY, this assessment is specifically for these clauses in SQL. You may need to stretch your thinking a little, but be sure that each statement under the GROUP BY header, has a GROUP BY clause; likewise with the HAVING and ORDER by requests.

- Once you have completed each statement, paste the SQL statements into this document along with a screen capture of your results screen. Remember that your statments include the GROUP BY, HAVING and ORDER BY clauses
- **GROUP BY**
 1. Find the player name and initials as player, the total number of penalties they have incurred for those players living in Stratford.

```
SELECT CONCAT(initials, ' ', name) AS Player, COUNT(amount) AS totalPenalties
FROM players, penalties
WHERE players.PLAYERNO = penalties.PLAYERNO
GROUP BY town
HAVING town = 'Stratford'
ORDER BY name;
```

Player	totalPenalties *
R Parmenter	1

2. Find the sum of the penalty amounts, the number of payments and group them by the year that the payment was made.

```
SELECT SUM(amount) AS PenaltyTotal, COUNT(payment_date) AS NumberOfPenalties,
year(payment_date) AS YearPaid
FROM penalties
GROUP BY year(payment_date)
ORDER BY payment_date;
```

PenaltyTotal	NumberOfPenalties *	YearPaid
150.00	3	1980
75.00	1	1981
30.00	1	1982
100.00	1	1983
125.00	2	1984

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- Find the team number and the number of matches where the number of matches won is more than the number matches lost.

```
SELECT matches.teamno, COUNT(*) AS WonMatches
FROM matches
WHERE matches.won > matches.lost
GROUP BY matches.teamno
```

teamno *	WonMatches *
1	4
2	2

- HAVING**

- Find the player number and the sum of the amounts paid for penalties as total paid where the sum of the amounts is greater than 50.

```
SELECT playerno, SUM(amount) AS TotalPaid
FROM penalties
GROUP BY PLAYERNO
HAVING SUM(amount) > 50;
```

playerno *	TotalPaid
6	100.00
27	175.00
44	130.00

- ORDER BY**

- List all the players by name and initials from Eltham and sort them by postcode.

```
SELECT CONCAT(name, ', ', initials) AS Player
FROM players
WHERE town = 'Eltham'
ORDER BY postcode;
```

Player
Collins, DD
Moorman, D

- List all the information available from the matches played ordered by the player no in descending order, the number of matches won and the number of matches lost

```
SELECT *
FROM matches
ORDER BY playerno DESC, won, lost;
```

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MATCHNO *	TEAMNO *	PLAYERNO *	WON *	LOST *
12	2	112	1	3
11	2	112	2	3
10	2	104	3	2
5	1	83	0	3
7	1	57	3	0
4	1	44	3	2
9	2	27	3	2
8	1	8	0	3
13	2	8	0	3
2	1	6	2	3
3	1	6	3	0
1	1	6	3	1
6	1	2	1	3

Turn in:

- You should turn in **this** Word document with your 6 SQL select statements, and the screen captures.

Where to turn it in:

- Return to Blackboard and turn this in via the link below.

This assignment requires that you create statements as specified below; using the UNION, UPDATE or CREATE TABLE statement.

UNION - Please copy the SQL statement that you type into this document (Do not use a screen capture for your SQL statements) and give me the number of records that you get as result.

- Find the player name and initials as a single column called **Player**, for those players living in Stratford, Inglewood and Midhurst. (Remember to use a UNION statement.)

SQL Statement:

```
SELECT CONCAT (NAME, " ", INITIALS) AS PLAYER
FROM PLAYERS
WHERE TOWN = 'Stratford'
UNION
SELECT CONCAT (NAME, " ", INITIALS) AS PLAYER
FROM PLAYERS
WHERE TOWN = 'Inglewood'
UNION
```

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```
SELECT CONCAT(NAME, " ", INITIALS) AS PLAYER  
FROM PLAYERS  
WHERE TOWN = 'Midhurst'  
  
ORDER BY PLAYER;
```

Number of records in results:



PLAYER
Baker E
Bishop D
Brown M
Collins C
Everett R
Hope PK
Newcastle B
Parmenter P
Parmenter R
Wise GWS

INTERSECT – Please copy the SQL statement that you type into this document (Do not use a screen capture for your SQL statements) and give me the number of records that you get as result.

2. I would like to see a listing of the players that have played a match, and are a part of a league. (Remember that those players that are in a league have a league number.)

SQL Statement:

I'm using mySQL with Toad, so intersect doesn't work with it.

Number of records in results:

CREATE and INSERT – Please copy the SQL statement(s) that you type into this document (Do not use a screen capture for your SQL statements) and give me the number of records that you get as result.

3. You are to create two new tables, COMMITTEE_CHAIRS and TOURNAMENTS, and populate the tables with data.

Additional Information:

- a. COMMITTEE_CHAIR table: The members of the general Committee have decided that the work is now too much for them to handle They have decided to create sub-committees

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- b. TOURNAMENTS table: The club has decided to start hosting tennis tournaments and wants to record information about the tournaments

COMMITTEE_CHAIRS

The information they have determined that they want to record about the sub-committee chairs includes

- **committee name** - title of the committee
- **player number** - player serving as chair
- **start date** - date the player starting serving as committee chair

In naming your columns be consistent with other naming conventions already established within the TENNIS database.

The following committees have been determined to be needed now

- **membership** - player number 8 has agreed to serve as chair starting 2000-8-1
- **tournament** - player number 28 has agreed to serve as chair starting 2000-8-1

If you feel there is anything missing in this definition, please list your assumptions and why you set your table up the way you did.

I set my table up this way because it seems like the natural order of importance with the data involved. Trying to keep like or related information together makes the result of the query easier to read. In this case it doesn't really make a difference but I'm assuming we will be adding to this table later.

SQL statement to create COMMITTEE_CHAIRS table:

```
CREATE TABLE COMMITTEE_CHAIRS
(PLYERNO INTEGER NOT NULL PRIMARY KEY,
COMMITTEE_NAME CHAR(15) NOT NULL,

BEGIN_DATE DATE)
```

SQL statement to insert data into the COMMITTEE_CHAIRS table:

```
INSERT INTO COMMITTEE_CHAIRS (PLYERNO, COMMITTEE_NAME, BEGIN_DATE)
VALUES (8, 'Membership', '2000-8-1'),

(28, 'Tournament', '2000-8-1')
```

PLYERNO *	COMMITTEE_NAME *	BEGIN_DATE	END_DATE
8	Membership	8/1/2000 12:00:00 AM	
28	Tournament	8/1/2000 12:00:00 AM	

(Sorry, I forgot to take screens until after I added the End_Date column.) Just out of curiosity, why did the Date show up as both a date and time? I put Date as a data type, not Timestamp. And how do I fix that?

TOURNAMENTS

TOURNAMENTS

The information Committee members have determined that they want to record about the tournaments includes

- **tournament date**
- **player number** - player serving as official at the tournament (not the same as the member serving as committee chair for the tournament)
- **league number** - what league will be playing in the tournament
- **type of tournament** - Men's only, to be indicated with 'M', Women's only, to be indicated with 'W' or both, indicated with a 'B'

In naming your columns be consistent with other naming conventions already established within our tennis database.

The following tournaments are scheduled now

- 2000-8-5, player number 8 has agreed to serve as official at this tournament, league number 1124 will be playing, and it will be open to both men and women
- 2000-9-15, player number 104 has agreed to serve as official at this tournament, league number 1608 will be playing, and it will be open to women

If you feel there is anything missing in this definition, please list your assumptions and why you set your table up the way you did.

I set my table up this way because it seems like the natural order of importance with the data involved. Trying to keep like or related information together makes the result of the query easier to read.

SQL statement to create TOURNAMENTS table:

```
CREATE TABLE TOURNAMENTS
(PAYERNO INTEGER NOT NULL PRIMARY KEY,
LEAGUENO CHAR(4),
TOURNAMENT_DATE DATE NOT NULL,

TOURNAMENT_TYPE CHAR(1) NOT NULL)
```

SQL statement to insert data into the TOURNAMENTS table:

```
INSERT INTO TOURNAMENTS (PAYERNO, LEAGUENO, TOURNAMENT_DATE, TOURNAMENT_TYPE)
VALUES (8, 1124, '2000-8-5', 'B'),

(104, 1608, '2000-9-15', 'W')
```

PLAYERNO *	LEAGUENO	TOURNAMENT_DATE *	TOURNAMENT_TYPE *
8	1124	8/5/2000 12:00:00 AM	B
104	1608	9/15/2000 12:00:00 AM	W

UPDATING TABLES – Please copy the SQL statement(s) that you type into this document (Do not use a screen capture!) and give me the number of records that you get as result.

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4. After seeing the structure of the COMMITTEE_CHAIRS table, the committee members decide they also want to keep track of the date that committee chairs stop being chairs. Alter the COMMITTEE_CHAIRS table adding a column:
 - **end date** – date the player stopped serving as a committee chair

SQL statement to alter the COMMITTEE_CHAIRS table:

```
ALTER TABLE COMMITTEE_CHAIRS  
ADD END_DATE DATE AFTER BEGIN_DATE
```

(This is cheating. I couldn't find where to add a column in the book until chapter 18)

PLAYERNO *	COMMITTEE_NAME *	BEGIN_DATE	END_DATE
8	Membership	8/1/2000 12:00:00 AM	
28	Tournament	8/1/2000 12:00:00 AM	