

Point and Click Picture Project 4 November 04, 2014

Introduction:

Below is the documentation for the Point and Click Picture project for my Introduction to Programming (CS115) course. This application moves an image at different angles having it 'bounce' its way back to the starting position.

Data Dictionary:

Name	Type	Description	Location	Initial Value
frmPointAndClick	form	Main form	n/a	text: "Point and Click the Pic"
grpRadio	group box	Group box containing radio buttons and buttons	frmPointAndClick	text: ""
label	label	Gradient	frmPointAndClick	text: "Gradient"
radOneHundred	radio button	Gradient 100%	frmPointAndClick	text: "100%"
radEighty	radio button	Gradient 80%	frmPointAndClick	text: "80%"
radSixty	radio button	Gradient 60%	frmPointAndClick	text: "60%"
radFourty	radio button	Gradient 40%	frmPointAndClick	text: "40%"
radTwenty	radio button	Gradient 20%	frmPointAndClick	text: "20%"
radZero	radio button	Gradient 0%	frmPointAndClick	text: "0%"
radNegativeTwenty	radio button	Gradient -20%	frmPointAndClick	text: "-20%"
radNegativeFourty	radio button	Gradient -40%	frmPointAndClick	text: "-40%"
radNegativeSixty	radio button	Gradient -60%	frmPointAndClick	text: "-60%"
radNegativeEighty	radio button	Gradient -80%	frmPointAndClick	text: "-80%"
radNegativeOneHundred	radio button	Gradient -100%	frmPointAndClick	text: "-100%"
btnReset	button	Reset button: moves the picture back to the middle of the form	frmPointAndClick	text: "Reset"

btnExit	button	Exit button: promptly closes the program.	frmPointAndClick	text: "Exit"
picShuriCastle	picture box	displays picture that will move	frmPointAndClick	text: ""
intLeft	variable	Left side of the form	frmPointAndClick	0
intRight	variable	Right side of the form	frmPointAndClick	0
intTop	variable	Top side of the form	frmPointAndClick	0
intBottom	variable	Bottom side of the form	frmPointAndClick	0
intGroupBox	variable	Group box containing the radio buttons, labels, and buttons	frmPointAndClick	0
intY_Move	variable	delta-y	frmPointAndClick	0
X_MOVE	constant	delta-x	frmPointAndClick	5
START_LEFT	constant	Start position of picShuriCastle	frmPointAndClick	0
_DOWN	constant	y-direction	frmPointAndClick	-1
_UP	constant	y-direction	frmPointAndClick	1
V_OFFSET	constant	vertical offset	frmPointAndClick	34
H_OFFSET	constant	horizontal offset	frmPointAndClick	8

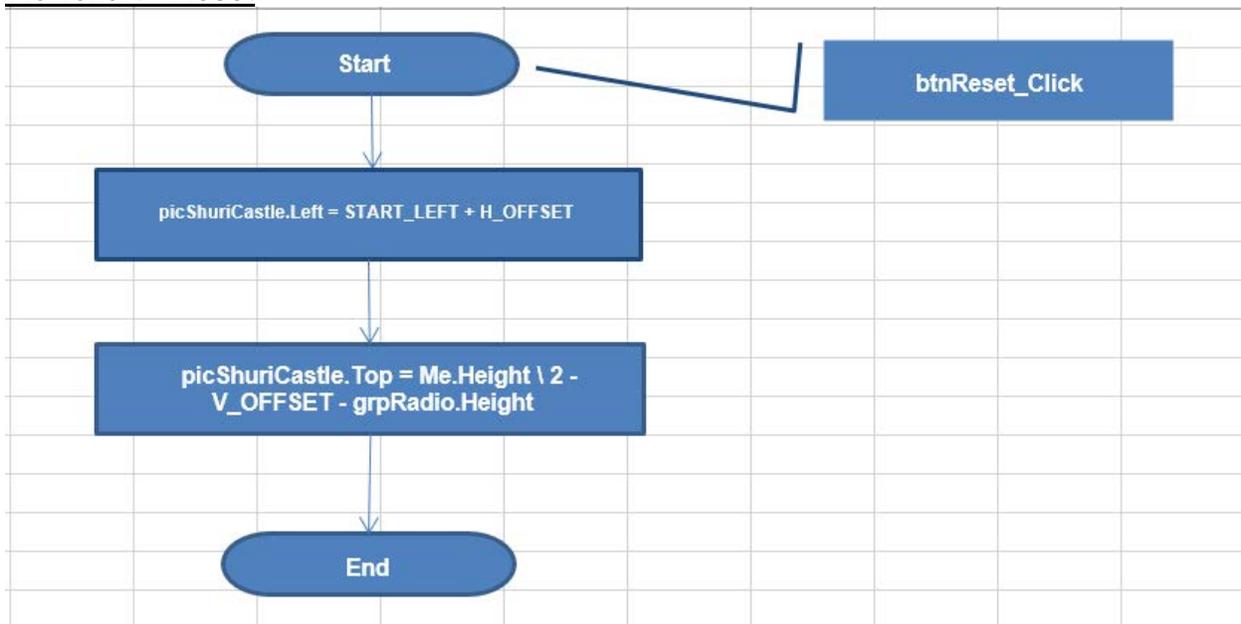
Test Plan:

Input	Expected output	Actual output	Reason for test
picShuriCastle			
Click picShuriCastle	picShuriCastle will animate, starting from the left side of the form, move	picShuriCastle animates, starting from the left side of the form to the side	Test movement of picShuriCastle

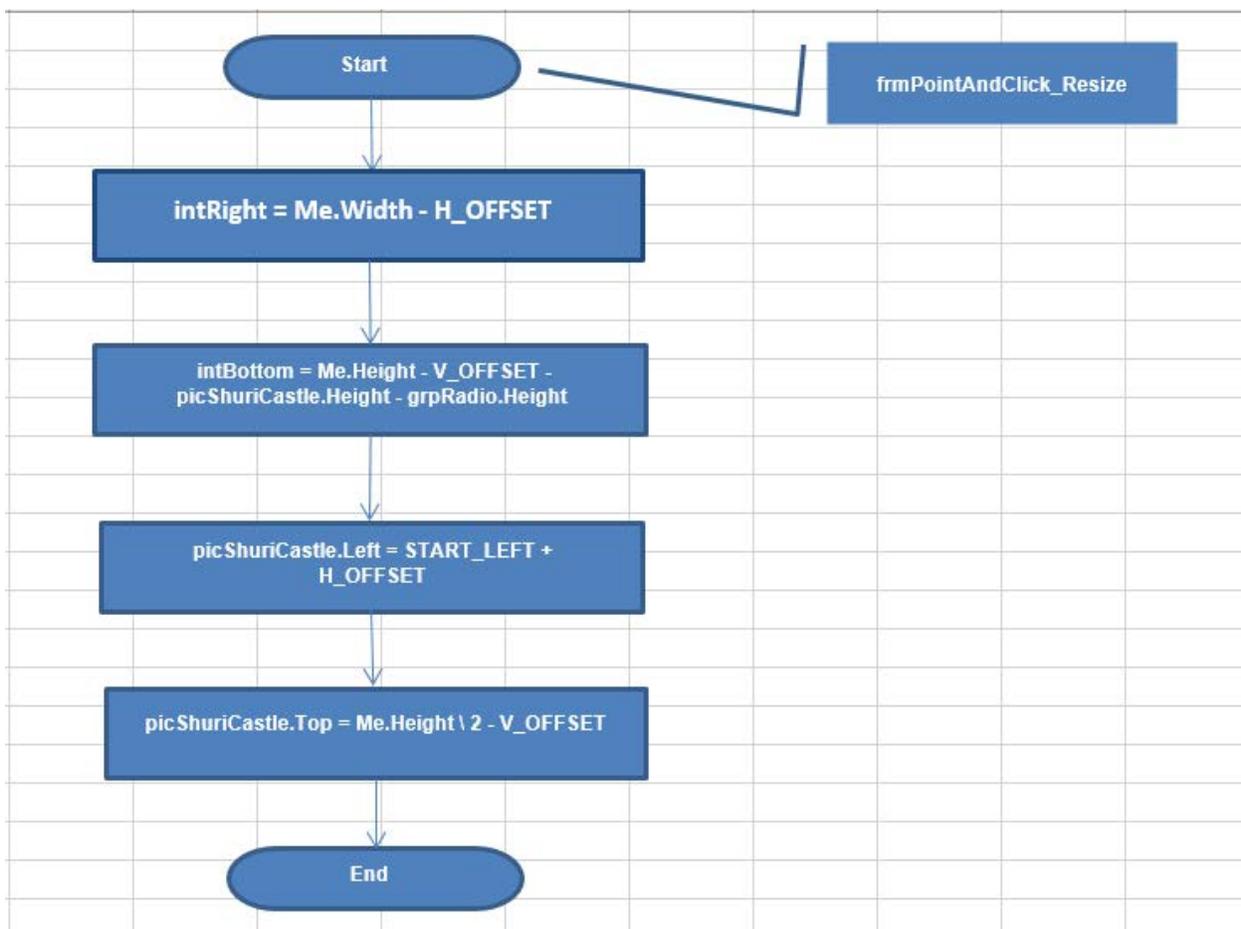
	toward the right side of the form.	side of the form, completing a loop.	
Click picShuriCastle, touches the right side of the form	picShuriCastle will animate, starting from the left side of the form, when it touches the right side it will bounce back towards the left side of the form.	picShuriCastle animates, starting from the left side of the form to the right side and back to the left side of the form, completing both loops.	Test movement when picShuriCastle when it reaches the right side of the form
Click picShuriCastle, touches the top	picShuriCastle will animate, starting from the left side of the form, when it touches the top, it will bounce downwards	picShuriCastle animates, starting from the left side of the form, touches the top of the form and bounces downward.	Test movement when picShuriCastle when it reaches the top of the form
Click picShuriCastle, touches the bottom	picShuriCastle will animate, starting from the left side of the form, when it touches the bottom, it will bounce upwards	picShuriCastle animates, starting from the left side of the form, touches the bottom of the form and bounces upwards.	Test movement when picShuriCastle when it reaches the bottom of the form
Click picShuriCastle at 100% gradient	picShuriCastle will animate upwards starting from the left side of the form.	picShuriCastle animates upwards starting from the left side of the form.	Test radio button functionality
Click picShuriCastle at 80% gradient	picShuriCastle will animate upwards starting from the left side of the form.	picShuriCastle animates upwards starting from the left side of the form.	Test radio button functionality
Click picShuriCastle at 60% gradient	picShuriCastle will animate upwards starting from the left side of the form.	picShuriCastle animates upwards starting from the left side of the form.	Test radio button functionality
Click picShuriCastle at 40% gradient	picShuriCastle will animate upwards starting from the left side of the form.	picShuriCastle animates upwards starting from the left side of the form.	Test radio button functionality

Click picShuriCastle at 20% gradient	picShuriCastle will animate upwards starting from the left side of the form.	picShuriCastle animates upwards starting from the left side of the form.	Test radio button functionality
Click picShuriCastle at 0% gradient	picShuriCastle will animate across starting from the left side to the right side of the form.	picShuriCastle animates across the form, starting from the left side to the right side of the form.	Test radio button functionality
Click picShuriCastle at 20% gradient	picShuriCastle will animate downwards starting from the left side of the form.	picShuriCastle animates downwards starting from the left side of the form.	Test radio button functionality
Click picShuriCastle at 40% gradient	picShuriCastle will animate downwards starting from the left side of the form.	picShuriCastle animates downwards starting from the left side of the form.	Test radio button functionality
Click picShuriCastle at 60% gradient	picShuriCastle will animate downwards starting from the left side of the form.	picShuriCastle animates downwards starting from the left side of the form.	Test radio button functionality
Click picShuriCastle at 80% gradient	picShuriCastle will animate downwards starting from the left side of the form.	picShuriCastle animates downwards starting from the left side of the form.	Test radio button functionality
Click picShuriCastle at 100% gradient	picShuriCastle will animate downwards starting from the left side of the form.	picShuriCastle animates downwards starting from the left side of the form.	Test radio button functionality
clicking the "Clear" button will reset the position of the picShuriCastle and resize the form.			
clicking the "Exit" button promptly closes the program.			

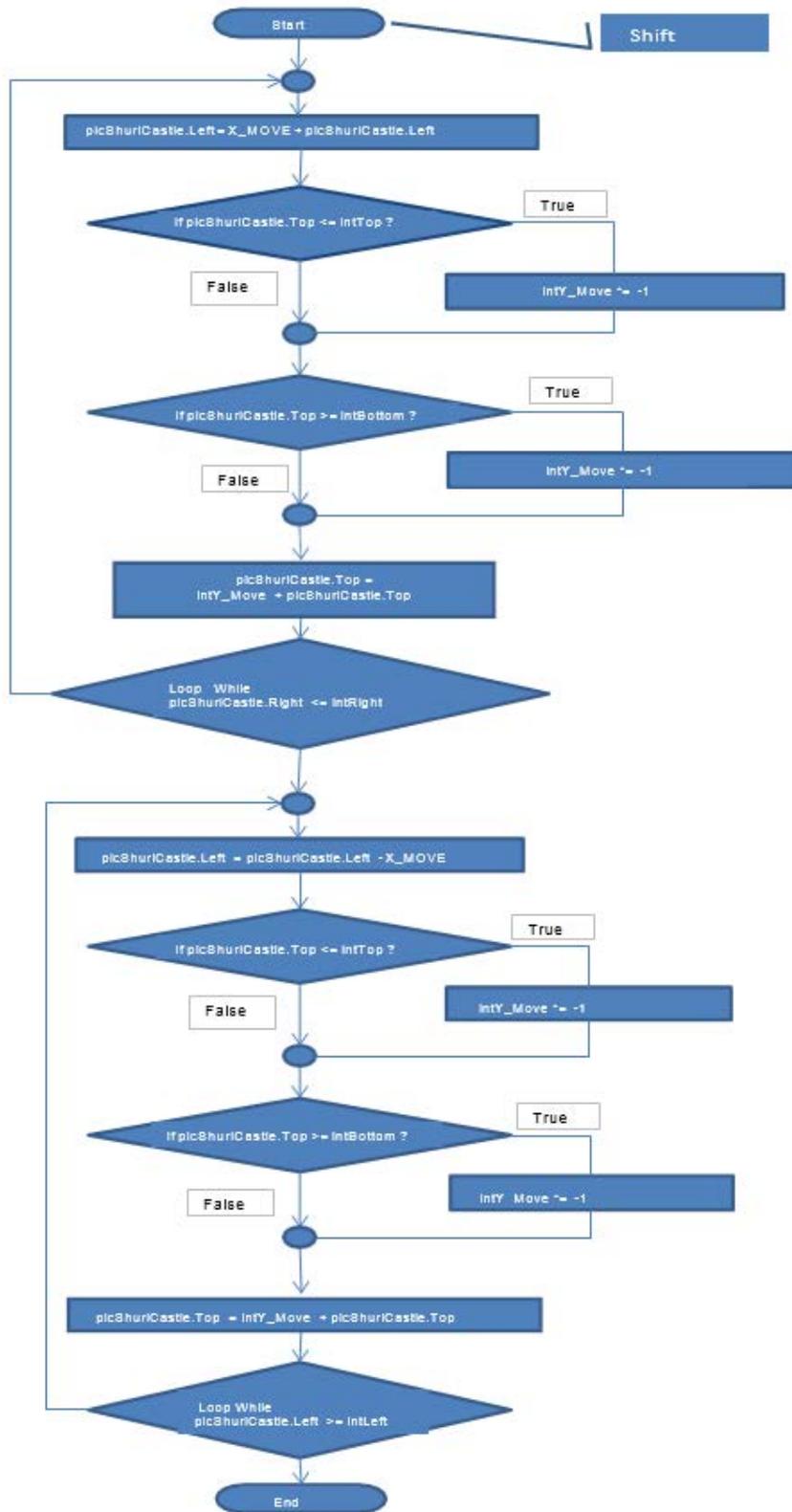
Flowchart - Reset



Flowchart - Resize



Flowchart - Shift



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Option Explicit On

Option Strict On

```
'-----  
' Point and Click the Pic  
' by Alice Uhl  
' Version 1.0  
' compiled using MS Visual Studio 2010  
' tested on an Intel Xeon PC running MS Windows 7  
' CS 115 Section D  
' 11/04/2014  
' Clicking the picture will animate it at different gradients  
' Image Credit, picShuriCastle and background photo by: Alice Uhl  
'-----
```

```
Public Class frmPointAndClick
```

```
'-----  
'Variables
```

```
Private intLeft As Integer = 0  
Private intRight As Integer = 0  
Private intTop As Integer = 0  
Private intBottom As Integer = 0  
Private intGroupBox As Integer = 0 'resize grpRadio  
Private intY_Move As Integer = 0 'delta-y (1 to 5)
```

```
'Private Constants
```

```
Private Const START_LEFT As Integer = 0  
Private Const _UP As Integer = -1 'y-direction (1)  
Private Const _DOWN As Integer = 1 'y-direction (-1)  
Private Const X_MOVE As Integer = 5 'delta-x (5)  
Private Const V_OFFSET As Integer = 34  
Private Const H_OFFSET As Integer = 8
```

```
'-----  
'Shift Subroutine
```

```
Private Sub shift()
```

```
'-----  
'Nested Do Loop While
```

```
Do 'Loop from left to right side of the form  
picShuriCastle.Left = X_MOVE + picShuriCastle.Left 'Moves the x-direction of the picture  
If picShuriCastle.Top <= intTop Then 'Bounces the image from the top  
intY_Move *= -1
```

```
End If
```

```
If picShuriCastle.Top >= intBottom Then 'Bounces the image from the bottom  
intY_Move *= -1
```

```
End If
```

```
picShuriCastle.Top = intY_Move + picShuriCastle.Top  
Loop While picShuriCastle.Right <= intRight 'End Loop
```

```
Do 'Loop from right to left side of the form
```

```
picShuriCastle.Left = picShuriCastle.Left - X_MOVE 'Moves the x-direction of the picture
```

```
If picShuriCastle.Top <= intTop Then 'Bounces the image from the top  
intY_Move *= -1
```

```
End If
```

```
If picShuriCastle.Top >= intBottom Then 'Bounces the image from the bottom  
intY_Move *= -1
```

```
End If
```

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```
        picShuriCastle.Top = intY_Move + picShuriCastle.Top 'Moves the image y-direction  
    Loop While picShuriCastle.Left >= intLeft           'End Loop
```

End Sub

```
-----  
'Form Load  
-----
```

```
Private Sub frmPointAndClick_Load(sender As Object, e As EventArgs) _  
    Handles MyBase.Load  
End Sub
```

```
-----  
'Form Resize for the form and image  
-----
```

```
Private Sub frmPointAndClick_Resize(sender As Object, e As EventArgs) _  
    Handles Me.Resize  
    intRight = Me.Width - H_OFFSET  
    intBottom = Me.Height - V_OFFSET - picShuriCastle.Height - grpRadio.Height  
    picShuriCastle.Left = START_LEFT + H_OFFSET  
    picShuriCastle.Top = Me.Height \ 2 - V_OFFSET - grpRadio.Height  
End Sub
```

```
-----  
'Click the Picture: calls the shift subroutine  
-----
```

```
Private Sub picShuriCastle_Click(sender As Object, e As EventArgs) _  
    Handles picShuriCastle.Click  
    shift()  
End Sub
```

```
-----  
'Exit Button: Promptly closes the program  
-----
```

```
Private Sub btnExit_Click(sender As Object, e As EventArgs) _  
    Handles btnExit.Click  
    Me.Close()  
End Sub
```

```
-----  
'Reset Button:  
'Resets image back to the starting point  
'Resets boundaries  
-----
```

```
Private Sub btnReset_Click(sender As Object, e As EventArgs) _  
    Handles btnReset.Click  
    picShuriCastle.Left = START_LEFT + H_OFFSET  
    picShuriCastle.Top = Me.Height \ 2 - V_OFFSET - grpRadio.Height  
End Sub
```

```
-----  
'Radio Buttons  
-----
```

```
'Radio Button: 100%  
Private Sub radOneHundred_CheckedChanged(sender As Object, e As EventArgs) _  
    Handles radOneHundred.CheckedChanged  
    intY_Move = 5 * _UP  
End Sub
```

```
'Radio Button: 80%  
Private Sub radEighty_CheckedChanged(sender As Object, e As EventArgs) _  
    Handles radEighty.CheckedChanged  
    intY_Move = 4 * _UP  
End Sub
```

```
'Radio Button: 60%  
Private Sub radSixty_CheckedChanged(sender As Object, e As EventArgs) _  
    Handles radSixty.CheckedChanged
```

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```
    intY_Move = 3 * _UP
End Sub
'Radio Button: 40%
Private Sub radFourty_CheckedChanged(sender As Object, e As EventArgs) _
    Handles radFourty.CheckedChanged
    intY_Move = 2 * _UP
End Sub
'Radio Button: 20%
Private Sub radTwenty_CheckedChanged(sender As Object, e As EventArgs) _
    Handles radTwenty.CheckedChanged
    intY_Move = 1 * _UP
End Sub

'Radio Buttons: 0%
Private Sub radZero_CheckedChanged(sender As Object, e As EventArgs) _
    Handles radZero.CheckedChanged
    intY_Move = 0
End Sub

'Radio Button: -20%
Private Sub radNegativeTwenty_CheckedChanged(sender As Object, e As EventArgs) _
    Handles radNegativeTwenty.CheckedChanged
    intY_Move = 1 * _DOWN
End Sub

'Radio Button: -40%
Private Sub radNegativeFourty_CheckedChanged(sender As Object, e As EventArgs) _
    Handles radNegativeFourty.CheckedChanged
    intY_Move = 2 * _DOWN
End Sub

'Radio Button: -60%
Private Sub radNegativeSixty_CheckedChanged(sender As Object, e As EventArgs) _
    Handles radNegativeSixty.CheckedChanged
    intY_Move = 3 * _DOWN
End Sub

'Radio Button: -80%
Private Sub radNegativeEighty_CheckedChanged(sender As Object, e As EventArgs) _
    Handles radNegativeEighty.CheckedChanged
    intY_Move = 4 * _DOWN
End Sub

'Radio Button: -100%
Private Sub radNegativeOneHundred_CheckedChanged(sender As Object, e As EventArgs) _
    Handles radNegativeOneHundred.CheckedChanged
    intY_Move = 5 * _DOWN
End Sub

End Class
```

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Output

