

# CONTENTS

<a href="#"><u>1. GAMES AND FUN</u></a> .....	1
<a href="#"><u>1.1 SIMPLE ANIMATED SLOT MACHINE</u></a> .....	1
<a href="#"><u>1.2 ADVANCED ANIMATED SLOT MACHINE</u></a> .....	4
<a href="#"><u>1.3 PROFESSIONAL CASINO SLOT MACHINE</u></a> .....	11
<a href="#"><u>1.4 DICE</u></a> .....	20
<a href="#"><u>1.5 JIGSAW PUZZLE</u></a> .....	23
<a href="#"><u>1.6 MEMORY GAME</u></a> .....	26
<a href="#"><u>1.7 PASSWORDS CRACKING PROGRAM</u></a> .....	29
<a href="#"><u>1.8 REVERSI</u></a> .....	35
<a href="#"><u>1.9 SNAKES AND LADDERS GAME</u></a> .....	58
<a href="#"><u>1.10 STAR WAR GAME</u></a> .....	72
<a href="#"><u>1.11 TIC TAC TOE</u></a> .....	81
<a href="#"><u>1.12 TIME BOMB</u></a> .....	90
<a href="#"><u>1.13 LUCKY DRAW</u></a> .....	93
<a href="#"><u>1.14 BOGGLE</u></a> .....	95
<a href="#"><u>2. EDUCATIONAL PROGRAMS</u></a> .....	98
<a href="#"><u>2.1 KID'S MATH</u></a> .....	98
<a href="#"><u>2.2 PYTHAGOREAN THEOREM</u></a> .....	108
<a href="#"><u>2.3 FACTORS FINDER</u></a> .....	110
<a href="#"><u>2.4 PRIME NUMBER TESTER</u></a> .....	111

<a href="#"><u>2.5 GEOMETRIC PROGRESSION</u></a> .....	113
<a href="#"><u>2.6 MAXIMUM NUMBER CALCULATOR</u></a> .....	115
<a href="#"><u>2.7 QUADRATIC EQUATION SOLVER</u></a> .....	117
<a href="#"><u>2.8 QUADRATIC FUNCTIONS GRAPH PLOTTER</u></a> .....	120
<a href="#"><u>2.9 SIMULTANEOUS EQUATIONS SOLVERS</u></a> .....	122
<a href="#"><u>2.10. THE SINE RULE</u></a> .....	126
<a href="#"><u>2.11 PROJECTILE</u></a> .....	128
<a href="#"><u>2.12 SIMPLE HARMONIC MOTION</u></a> .....	130
<a href="#"><u>3. FINANCIAL PROGRAMS</u></a> .....	132
<a href="#"><u>3.1 AMORTIZATION CALCULATOR</u></a> .....	132
<a href="#"><u>3.2 DEPRECIATION CALCULATOR</u></a> .....	135
<a href="#"><u>3.3 FUTURE VALUE CALCULATOR</u></a> .....	137
<a href="#"><u>3.4 INVESTMENTS CALCULATOR</u></a> .....	139
<a href="#"><u>3.5 PAYBACK PERIOD CALCULATOR</u></a> .....	141
<a href="#"><u>4. GRAPHICS PROGRAMS</u></a> .....	143
<a href="#"><u>4.1 DRAWING PAD</u></a> .....	143
<a href="#"><u>4.2 PICTURE VIEWER</u></a> .....	147
<a href="#"><u>5 MULTIMEDIA PROGRAMS</u></a> .....	153
<a href="#"><u>5.1 CREATING A DVD PLAYER</u></a> .....	154
<a href="#"><u>5.2 A SMART AUDIO PLAYER</u></a> .....	157
<a href="#"><u>5.3 MULTIMEDIA PLAYER</u></a> .....	162
<a href="#"><u>6 TOOLS AND UTILITIES</u></a> .....	168

<a href="#"><u>6.1 BMI CALCULATOR</u></a> .....	168
<a href="#"><u>6.2 CALCULATOR</u></a> .....	170
<a href="#"><u>6.3 DIGITAL CLOCK</u></a> .....	180
<a href="#"><u>6.4 POLLING SYSTEM</u></a> .....	181
<a href="#"><u>6.5 DIGITAL STOPWATCH</u></a> .....	184
<a href="#"><u>6.6 CHOICE SELECTION PROGRAM</u></a> .....	191
<a href="#"><u>7 DATABASE APPLICATIONS</u></a> .....	193
<a href="#"><u>7.1 SIMPLE DATABASE MANAGEMENT SYSTEM</u></a> .....	193
<a href="#"><u>7.2 A SIMPLE DATABASE APPLICATION</u></a> .....	197
<a href="#"><u>7.3 A LIBRARY MANAGEMENT SYSTEM</u></a> .....	201
<a href="#"><u>7.4 INVENTORY MANAGEMENT SYSTEM</u></a> .....	219
<a href="#"><u>8. INTERNET APPLICATIONS</u></a> .....	243
<a href="#"><u>8.1 WEBBROWSER</u></a> .....	243
<a href="#"><u>8.2 FTP PROGRAM</u></a> .....	248

# 1. Games and Fun

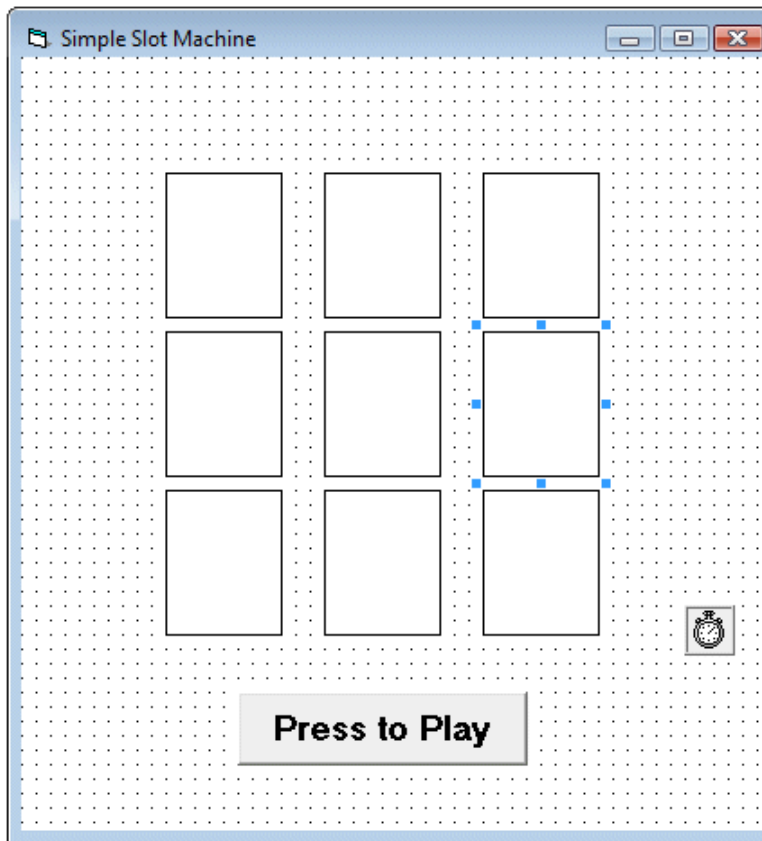
## 1.1 Simple Animated Slot Machine

This simple slot machine was created using Visual Basic 6. While it does not exactly resemble the real machines played in casinos, it does demonstrate the concept of randomness and probability in an actual slot machine. Slot machine is a game of chance; many different outcomes will appear when the player presses the play button.

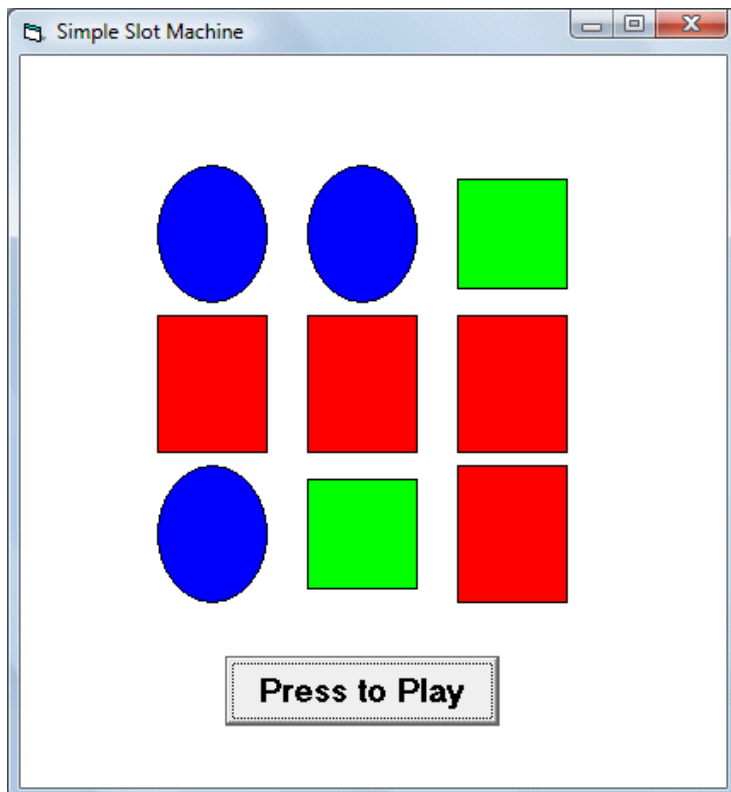
In this program, you need to draw an array of nine shapes, Visual Basic will automatically label the shapes as shape1(0), shape1(1), shape1(2), shape1(3), shape1(4), shape1(5), shape1(6), shape1(7) and shape1(8) respectively. Arrange the shapes into three rows. Write the code so that only three types of shapes appear randomly. The shapes are square, oval and rectangle. Their appearance can be set at runtime using the Shape properties. For example, Shape1 (0).Shape=0 means it is a rectangle, Shape1 (0).Shape=1 is a square and Shape1 (0).Shape=2 is an oval shape. The colors of the shapes are controlled by the **FillColor** property of the shapes. For example, Shape1 (0).FillColor=vbRed will give the shape a red color. Besides, the default FillStyle property is transparent; therefore you need to set the FillStyle property to solid so that the colors can show up.

Randomness can be achieved by using the **RND** function. You also need to insert a timer to create the animated effect of the slot machine. The time interval is set to 10 so that the shapes change at a fast rate thus creates the illusion of animation. The program also uses a variable x to control the timer so that it can be stopped when x achieve certain value, otherwise the program will loop forever. The purpose of this program is just to show how different shapes can appear randomly, therefore many advanced features of a slot machine such as the amount of bet are not included here.

## The Design Interface



## The Runtime Interface



## The code

```
Private Sub Command1_Click()

    'To start the timer

    Timer1.Enabled = True
    x = 0

End Sub

Private Sub Timer1_Timer()

    x = x + 10
    Dim a, i As Integer
    For i = 0 To 8

        'To generate random integers 0,1 and 2
        a = Int(Rnd * 3)
        Shape1(i).Shape = a
        Shape1(i).FillStyle = Solid
        If a = 0 Then
            Shape1(i).FillColor = vbRed
        ElseIf a = 1 Then
            Shape1(i).FillColor = vbGreen
        Else
            Shape1(i).FillColor = vbBlue
        End If

    Next i

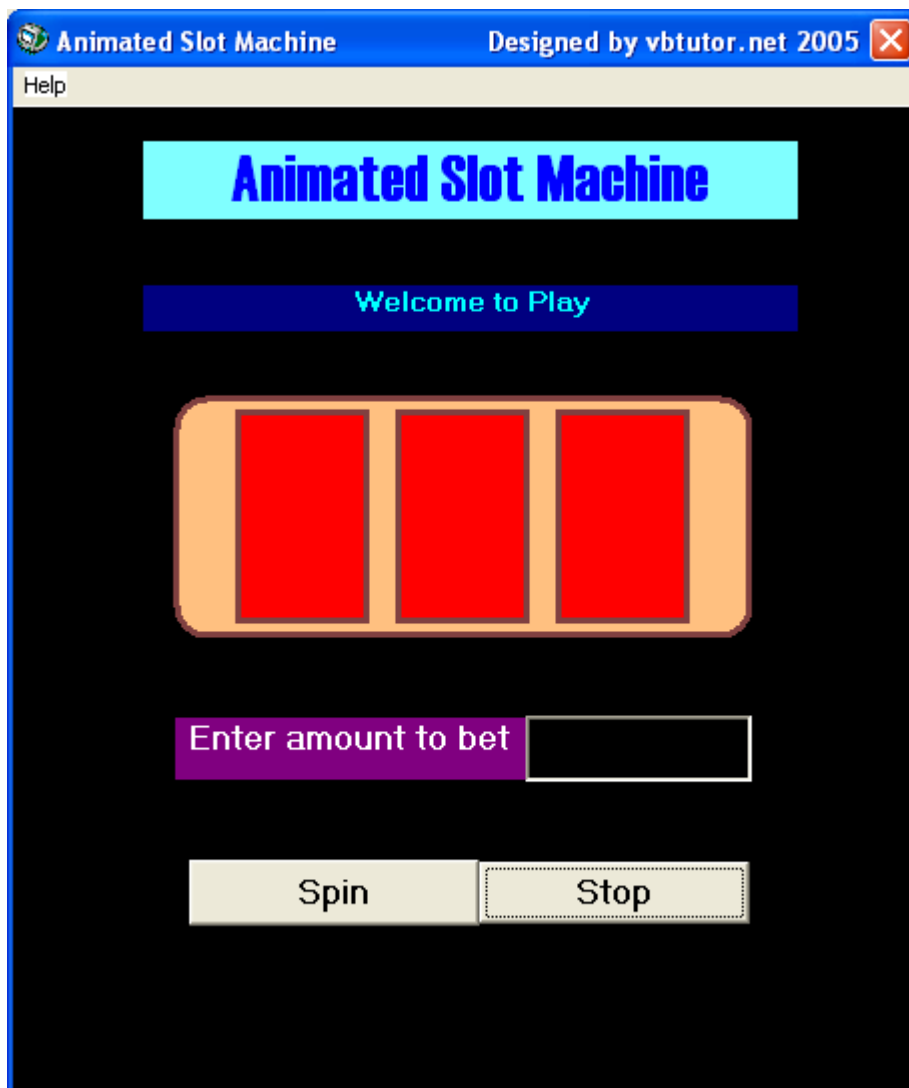
    'To stop the timer
    If x > 500 Then
        Timer1.Enabled = False
    End If
End Sub
```

End If

End Sub

## 1.2 Advanced Animated Slot Machine

This is a more advanced animated slot machine created using Visual Basic 6. This is an improvement from the simple animated slot machine as the player can enter the amount to bet. Besides that, you can add sound and music to the program. The interface is shown below:



To design the interface, drag the form to a suitable size. Insert a label control and place it at the top part of the part. Change its caption to 'Animated Slot Machine', set proper font type, font size as well as foreground and background colors. Insert another label control and place it immediately below the first label. This label serves as display panel for showing how much



the user has won. The display here will be animated. Next, place a shape control and set its shape property to rounded rectangle. Drag it to a proper size and fill it with a suitable solid color. It will act as the background panel for the spinning shapes. Now for the spinning shapes, insert a shape control into the form and then copy and paste repeatedly to create a control array of three shapes, each will be differentiated by its index , the first is shape1(0), the second is shape1(1) and the third shape1(2). Retain the default shape property as rectangle and change their shapes during runtime. Place all the three shapes on top of the first shape control, use color to make the former shapes stand out. Insert another label below the shape controls above and change its caption to “Enter amount to bet” to give instruction to the player the amount they want to bet. In order to let the player enters the amount they want to bet, insert a text box on the right of the above label and clear its text.

The next two controls you need to insert into the form are two command buttons, one of them you label its caption as “Spin” and the other one you label it as “Stop”.

To create the animated effect, you need to insert a timer and set its interval to 20, which is equivalent to 0.02 second. You also need to set its Enabled property as False so that the slot machine will not start until the user presses the “Spin” button. Besides, you need to insert the Multimedia Control to produce the sound effects. In order to include the multimedia control as one of the controls, click on project on the menu in Visual Basic 6 IDE and select components, and then click on **Microsoft Multimedia Control 6.0** to make it appear in the tool box. Now you can drag the Multimedia Control into your form. In this program, you need to use two Microsoft Multimedia Controls, one for playing the spinning sound and the other for the jackpot sound. Set the Visible property of both Microsoft Multimedia Controls as False so that the user will not see them at runtime. Lastly, insert a menu item and label it as “Help” and a submenu item and label it as “Instruction”

## The code

```
Dim x As Integer
```

```
Dim amount As Integer
```

```
Dim a, b, c As Integer
```

```
Private Sub Spin_Click()
```

```
    Timer1.Enabled = True
```

```
    MMControl1.Command = "Close"
```

```
    MMControl2.Command = "close"
```

```
    x = 0
```

```
    Label2.Caption = "Your Credits"
```

```
    amount = Val(Text1)
```

```
End Sub
```

```
Private Sub Stop_Click()
```

```
    End
```

```
End Sub
```

```
Private Sub Form_Click()
```

```
    Label3.Visible = False
```

End Sub

Private Sub Form\_Load()

Label1.Caption = " Welcome to Play"

Label3.Visible = False

End Sub

'To display instructions when the user clicks on the menu item Help

Private Sub instruct\_click()

Label3.Visible = True

End Sub

Private Sub Text1\_Change()

amount = Val(Text1)

End Sub

Private Sub Timer1\_Timer()

If x < 500 Then

spin

Else

Timer1.Enabled = False

MMControl1.Command = "Stop"

Label1.Alignment = 2

If (a = 3 And b = 3 And c <> 3) Or (a = 3 And c = 3 And b <> 3) Or \_

(b = 3 And c = 3 And a <> 3) Then

Label1.Caption = " You win 20 dollars"

amount = amount + 20

End If

If (a = 4 And b = 4 And c <> 4) Or (a = 4 And c = 4 And b <> 4) Or \_

(b = 4 And c = 4 And a <> 4) Then

Label1.Caption = " You win 30 dollars"

amount = amount + 30

End If

If (a = 5 And b = 5 And c <> 5) Or (a = 5 And c = 5 And b <> 5) Or \_

(b = 5 And c = 5 And a <> 5) Then

Label1.Caption = " You win 40 dollars"

amount = amount + 40

End If

If (a = 3 And b = 3 And c = 3) Or (a = 4 And b = 4 And c = 4) Or \_

(a = 5 And b = 5 And c = 5) Then

'To play sound

MMControl2.Notify = False

MMControl2.Wait = True

MMControl2.Shareable = False

MMControl2.DeviceType = "WaveAudio"

MMControl2.FileName = "C:\ My Documents\VB  
program\audio\jackpot.wav"

MMControl2.Command = "Open"

MMControl2.Command = "Play"

Label1.Caption = "Congratulation! Jackpot!!! You win 200 dollars!"

amount = amount + 200

End If

If (a = 3 And b = 4 And c = 5) Or (a = 3 And b = 5 And c = 4) \_

Or (a = 4 And b = 3 And c = 5) Or (a = 4 And b = 5 And c = 3) \_

Or (a = 5 And b = 4 And c = 3) Or (a = 5 And b = 3 And c = 4) Then

Label1.Caption = "Too bad, you lost 50 dollars"

amount = amount - 50

End If

If amount < 0 Then

Label1.Caption = "Oh! You're bankrupt!"

End If

Text1.Text = Str\$(amount)

End If

End Sub

'To simulate spinning of the shapes

Sub spin()

x = x + 10

Randomize Timer

a = 3 + Int(Rnd \* 3)

b = 3 + Int(Rnd \* 3)

c = 3 + Int(Rnd \* 3)

MMControl1.Notify = False

MMControl1.Wait = True

MMControl1.Shareable = False

MMControl1.DeviceType = "WaveAudio"

```
MMControl1.FileName = "C:\ My Documents\VB program\audio\slot2.wav"
```

```
MMControl1.Command = "Open"
```

```
MMControl1.Command = "Play"
```

```
Label1.Caption = "Good Luck!"
```

```
Label1.Alignment = a - 3
```

```
Shape1(0).Shape = a
```

```
If a = 3 Then
```

```
    Shape1(0).FillColor = &HFF00&
```

```
End If
```

```
If a = 4 Then
```

```
    Shape1(0).FillColor = &HFF00FF
```

```
End If
```

```
If a = 5 Then
```

```
    Shape1(0).FillColor = &HFF0000
```

```
End If
```

```
Shape1(1).Shape = b
```

```
If b = 3 Then
```

```
    Shape1(1).FillColor = &HFF00&
```

End If

If b = 4 Then

    Shape1(1).FillColor = &HFF00FF

End If

If b = 5 Then

    Shape1(1).FillColor = &HFF0000

End If

Shape1(2).Shape = c

If c = 3 Then

    Shape1(2).FillColor = &HFF00&

End If

If c = 4 Then

    Shape1(2).FillColor = &HFF00FF

End If

If c = 5 Then

    Shape1(2).FillColor = &HFF0000

End If

End Sub



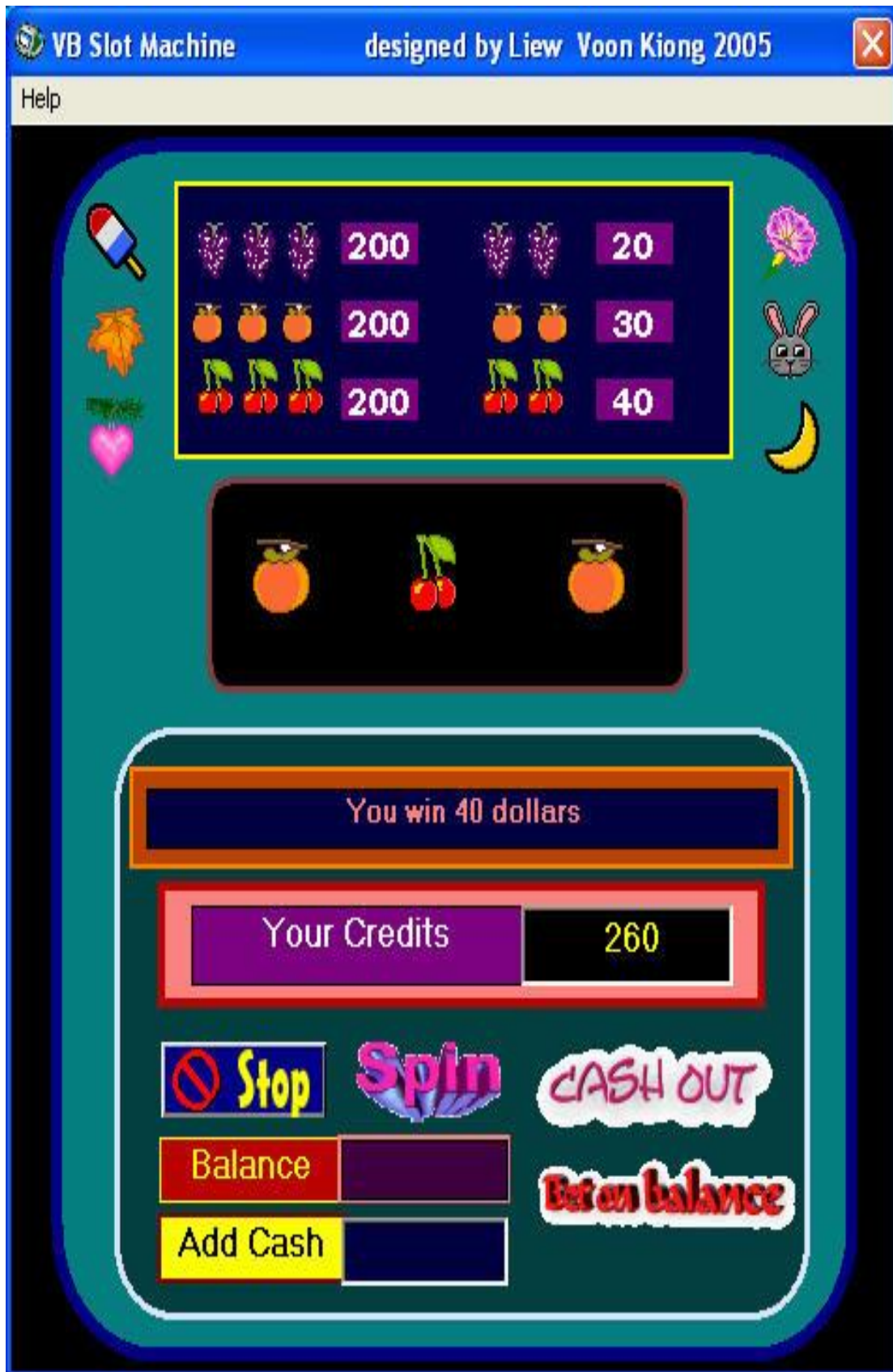
## 1.3 Professional Casino Slot Machine

This is a slot machine that resembles the real slot machines in the casinos. To create the project, you need to insert three image boxes into the form and write code so that they will display a set of three different pictures randomly when the user presses on the spin button. It involves a randomization process. Next, insert a timer and write relevant code to produce animated effects. In addition, you can also insert the **Microsoft Multimedia Control** so that it can play sounds that synchronize with the spinning of the slot machine as well as when the player hits the jackpot.

In the program, you need to declare three variables a, b and c that will be randomly assigned the values of 1, 2 and 3 using the RND function. Based on these three random numbers, three different images will be loaded into the three image boxes randomly using the **LoadPicture** method. Animated effects are created by entering the above procedure under the control of Timer1, which will call the **spin** procedure after every interval until it fulfills a certain condition. Sounds are also added using the Microsoft Multimedia Control to make the game more realistic and interesting. The amount won is controlled by the **If...Then** statements

It is important that you define the correct path for the LoadPicture method; otherwise the program will not be able to run. For example, our path is **C:\VB program\Images\grape.gif**, you need to create the necessary folders and have the necessary image file if you wish to copy the program directly. If you place the image file in a differently folder, you need to modify the path accordingly. For example, if your image file is in D:\VB program\Images\grape.gif, then you need to modify the LoadPicture method to **LoadPicture ("D:\VB program\Images\grape.gif")**.

The Interface



## The code

```
Dim x As Integer
```

```
Dim amount As Variant
```

```
Dim balance As Variant
```

```
Dim a, b, c As Integer
```

```
Private Sub Command1_Click()
```

```
    End
```

```
End Sub
```

'Code for the Bet on balance button

```
Private Sub betbal_Click()
```

```
    Label13.Caption = Str$(Val(Label6.Caption) + Val(Label13.Caption))
```

```
    Label6.Caption = ""
```

```
End Sub
```

'Code for Cash Out button

```
Private Sub Cashout_Click()
```

```
    If Val(Label13.Caption) > 0 Then
```

```
        balance = Val(Label6.Caption) + Val(Label13.Caption)
```

```
        Label13.Caption = ""
```

```
        Label6.Caption = Str$(balance)
```

```
Label1.Caption = "Please bet again"
```

```
Else
```

```
Label1.Caption = "Sorry, you have no money to cash out."
```

```
End If
```

```
End Sub
```

```
Private Sub Form_Click()
```

```
Label3.Visible = False
```

```
End Sub
```

```
Private Sub Form_Load()
```

```
Label1.Caption = " Welcome to Play"
```

```
Label3.Visible = False
```

```
Image1(0).Picture = LoadPicture("C:\My Documents\VB &_  
program\Images\grape.gif")
```

```
Image1(1).Picture = LoadPicture("C:\My Documents\VB &_  
program\Images\cherry.gif")
```

```
Image1(2).Picture = LoadPicture("C:\ My Documents\ VB &_  
program\Images\orange.gif")
```

```
End Sub
```

'To show instruction on a label control

```
Private Sub instruct_click()
```

```
Label3.Visible = True
```

End Sub

Private Sub Label12\_Click()

Label13.Caption = Str\$(Val(Label13.Caption) + Val(Text2.Text))

Text2.Text = ""

End Sub

'The spin procedure

Private Sub spin\_Click()

Timer1.Enabled = True

MMControl1.Command = "Close"

MMControl2.Command = "close"

x = 0

amount = Val(Text1)

balance = Val(Label6)

End Sub

'Code for the Spin button

Private Sub spinning\_Click()

If Val(Label13.Caption) > 0 Then

Timer1.Enabled = True

MMControl1.Command = "Close"

```
MMControl2.Command = "close"
```

```
x = 0
```

```
amount = Val(Label13.Caption)
```

```
balance = Val(Label6)
```

```
Else
```

```
Label1.Caption = "Sorry, you have no money to spin, add cash."
```

```
End If
```

```
End Sub
```

```
'To stop the game
```

```
Private Sub stop_Click()
```

```
End
```

```
End Sub
```

```
Private Sub Timer1_Timer()
```

```
'Call the spin procedure
```

```
spin
```

```
x = x + 20
```

```
If x > 500 Then
```

```
Timer1.Enabled = False
```

```
MMControl1.Command = "Stop"
```

Label1.Alignment = 2

If (a = 3 And b = 3 And c <> 3) Or (a = 3 And c = 3 And b <> 3) Or \_

(b = 3 And c = 3 And a <> 3) Then

Label1.Caption = " You win 20 dollars"

amount = amount + 20

End If

If (a = 4 And b = 4 And c <> 4) Or (a = 4 And c = 4 And b <> 4) Or \_

(b = 4 And c = 4 And a <> 4) Then

Label1.Caption = " You win 30 dollars"

amount = amount + 30

End If

If (a = 5 And b = 5 And c <> 5) Or (a = 5 And c = 5 And b <> 5) Or \_

(b = 5 And c = 5 And a <> 5) Then

Label1.Caption = " You win 40 dollars"

amount = amount + 40

End If

If (a = 3 And b = 3 And c = 3) Or (a = 4 And b = 4 And c = 4) Or \_

(a = 5 And b = 5 And c = 5) Then

'Playing sound

MMControl2.Notify = False

MMControl2.Wait = True

MMControl2.Shareable = False

MMControl2.DeviceType = "WaveAudio"

MMControl2.FileName = "C:\My Documents\VB \_  
program\audio\jackpot.wav"

MMControl2.Command = "Open"

MMControl2.Command = "Play"

Label1.Caption = " Congratulation! Jackpot!!! You win 200 dollars!"

amount = amount + 200

End If

If (a = 3 And b = 4 And c = 5) Or (a = 3 And b = 5 And c = 4) Or \_

(a = 4 And b = 3 And c = 5) Or (a = 4 And b = 5 And c = 3) Or \_

(a = 5 And b = 4 And c = 3) Or (a = 5 And b = 3 And c = 4) Then

Label1.Caption = " Too bad, you lost 100 dollars"

amount = amount - 100

End If



```
If amount < 0 Then
```

```
    Label1.Caption = "Oh! you're bankrupt! Add cash to play!"
```

```
End If
```

```
Label13.Caption = Str$(amount)
```

```
End If
```

```
End Sub
```

```
'The spin sub procedure
```

```
Sub spin()
```

```
    a = 3 + Int(Rnd * 3)
```

```
    b = 3 + Int(Rnd * 3)
```

```
    c = 3 + Int(Rnd * 3)
```

```
MMControl1.Notify = False
```

```
MMControl1.Wait = True
```

```
MMControl1.Shareable = False
```

```
MMControl1.DeviceType = "WaveAudio"
```

```
MMControl1.FileName = "C:\ My Documents\VBprogram\audio\slot2.wav"
```

```
MMControl1.Command = "Open"
```

```
MMControl1.Command = "Play"
```

```
Label1.Caption = "Good Luck!"
```

Label1.Alignment = a - 3

If a = 3 Then

Image1(0).Picture = LoadPicture("C:\ My Documents\VB \_  
program\Images\grape.gif")

End If

If a = 4 Then

Image1(0).Picture = LoadPicture("C:\ My Documents\VBprogram\ \_  
Images\cherry.gif")

End If

If a = 5 Then

Image1(0).Picture = LoadPicture("C:\My Documents\VBprogram\ \_  
Images \orange.gif")

End If

If b = 3 Then

Image1(1).Picture = LoadPicture("C: \ My Documents\VBprogram\  
Images\grape.gif")

End If

If b = 4 Then

Image1(1).Picture = LoadPicture("C:\ : \ My Documents\VBprogram\ \_  
Images \cherry.gif")

End If

If b = 5 Then

```
Image1(1).Picture = LoadPicture("C:\ My Documents\VBprogram\  
Images \orange.gif")
```

End If

If c = 3 Then

```
Image1(2).Picture = LoadPicture("C:\ My Documents\VBprogram\  
Images grape.gif")
```

End If

If c = 4 Then

```
Image1(2).Picture = LoadPicture("C:\ My Documents\VBprogram\  
Images \cherry.gif")
```

End If

If c = 5 Then

```
Image1(2).Picture = LoadPicture("C:\ : \ My Documents\VBprogram\  
Images \orange.gif")
```

End If

End Sub