Unit 8.02 Programming Exercises 3

1. Bouncing Ball

Public Class Form1

Private Sub tmrAnimatedBall\_Tick(ByVal sender As Object, ByVal e As System.EventArgs) Handles tmrAnimatedBall.Tick

Const MAX\_IMAGES As Integer = 4

Static newPosition As Integer = 0

Static direction As Integer

'Display an image from array

Me.picBall.Image = My.Resources.ball0

'Determine next image

If newPosition = 0 Then 'change to upward direction

direction = 1

ElseIf newPosition = MAX\_IMAGES - 1 Then 'change to downward direction

direction = -1

End If

newPosition += direction

'Display next image

Select Case newPosition

Case 0

Me.picBall.Image = My.Resources.ball0

Case 1

Me.picBall.Image = My.Resources.ball1

Case 2

Me.picBall.Image = My.Resources.ball2

Case 3

Me.picBall.Image = My.Resources.ball3

End Select

End Sub

Private Sub Form1\_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load

End Sub

End Class

1. Change Image

Public Class Form1

Private Sub Button\_Clicked(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnHeart.Click, btnClock.Click, btnStar.Click, btnHappyFace.Click

Dim btnButtonClicked As Button = sender

Select Case btnButtonClicked.Tag

Case "Heart"

Me.BackgroundImage = My.Resources.heart

Case "HappyFace"

Me.BackgroundImage = My.Resources.happyface

Case "Clock"

Me.BackgroundImage = My.Resources.clock

Case "Star"

Me.BackgroundImage = My.Resources.star

End Select

End Sub

End Class

1. Draw a Face

Public Class Form1

Private Sub btnHappy\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnHappy.Click

Dim pictureBoxSurface As Graphics = Me.picFrame.CreateGraphics

pictureBoxSurface.Clear(Me.BackColor)

Dim maxX As Integer = Me.picFrame.Size.Width

Dim maxY As Integer = Me.picFrame.Size.Height

'Define all the brushes

Dim tanBrush As New SolidBrush(Color.Tan)

Dim grayBrush As New SolidBrush(Color.LightGray)

Dim blueBrush As New SolidBrush(Color.Blue)

Dim redBrush As New SolidBrush(Color.Red)

Dim pinkBrush As New SolidBrush(Color.PaleVioletRed)

'Draw rectangle in background of picturebox

pictureBoxSurface.FillRectangle(tanBrush, 0, 0, maxX, maxY)

'Draw large ellipse for face

pictureBoxSurface.FillEllipse(grayBrush, 1, 1, maxX - 3, maxY - 3)

'Draw eyes

pictureBoxSurface.FillEllipse(blueBrush, maxX \ 3 - 10, 30, 35, 35)

pictureBoxSurface.FillEllipse(blueBrush, maxX \ 2 + 10, 30, 35, 35)

'Draw nose

pictureBoxSurface.FillEllipse(redBrush, maxX \ 2 - 10, maxY \ 2, 20, 20)

'Draw mouth

pictureBoxSurface.FillPie(pinkBrush, maxX \ 3 - 5, maxY \ 4 + 40, 80, 80, 0, 180)

End Sub

Private Sub btnSad\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnSad.Click

Dim pictureBoxSurface As Graphics = Me.picFrame.CreateGraphics

pictureBoxSurface.Clear(Me.BackColor)

Dim maxX As Integer = Me.picFrame.Size.Width

Dim maxY As Integer = Me.picFrame.Size.Height

'Define all the brushes

Dim tanBrush As New SolidBrush(Color.Tan)

Dim grayBrush As New SolidBrush(Color.LightGray)

Dim blueBrush As New SolidBrush(Color.Blue)

Dim redBrush As New SolidBrush(Color.Red)

Dim pinkBrush As New SolidBrush(Color.PaleVioletRed)

'Draw rectangle in background of picturebox

pictureBoxSurface.FillRectangle(tanBrush, 0, 0, maxX, maxY)

'Draw large ellipse for face

pictureBoxSurface.FillEllipse(grayBrush, 1, 1, maxX - 3, maxY - 3)

'Draw eyes

pictureBoxSurface.FillEllipse(blueBrush, maxX \ 3 - 10, 30, 35, 35)

pictureBoxSurface.FillEllipse(blueBrush, maxX \ 2 + 10, 30, 35, 35)

'Draw nose

pictureBoxSurface.FillEllipse(redBrush, maxX \ 2 - 10, maxY \ 2, 20, 20)

'Draw mouth

pictureBoxSurface.FillPie(pinkBrush, maxX \ 3 - 5, maxY \ 3 + 60, 80, 80, 0, -180)

End Sub

Private Sub Form1\_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load

End Sub

End Class