**PUZZLE GAME 2D BY PTI A, B, C FT – UM**

**Syntax :**

**Form FUtama :**

Public Class FUtama

Private Sub Button1\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click

slidePuzzle.mnfrm.Show()

Me.Hide()

End Sub

Private Sub Button4\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button4.Click

Me.Close()

End Sub

Private Sub Button3\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button3.Click

Me.Hide()

Form1.Show()

End Sub

Private Sub Button2\_Click(sender As Object, e As EventArgs) Handles Button2.Click

FAbout.Show()

Me.Hide()

End Sub

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

End Sub

End Class

**Form1 (Form Practice Game)**

Public Class Form1

Dim smt As String

Dim acak As Integer

Dim gambar As Object

Dim timeleft As TimeSpan

Dim starttime As DateTime

Dim ttlMins As Integer

Private Sub Button10\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button10.Click

Timer1.Enabled = True

acak = Rnd() \* 10

End Sub

Private Sub Button11\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button11.Click

Timer1.Enabled = False

Button11.Enabled = False

Button12.Enabled = True

Timer2.Interval = 1000

Timer2.Enabled = True

ttlMins = Integer.Parse(TextBox1.Text)

starttime = Now.AddMinutes(ttlMins)

timeleft = starttime.Subtract(Now)

Label4.Text = Format(timeleft.Minutes, "#0") & " Mins" & " " & Format(timeleft.Seconds, "00") & " Secs"

End Sub

Private Sub Button1\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button1.Click

If Button2.Text = "" Then

gambar = Button1.BackgroundImage

Button1.BackgroundImage = Button2.BackgroundImage

Button2.BackgroundImage = gambar

smt = Button1.Text

Button1.Text = Button2.Text

Button2.Text = smt

ElseIf Button4.Text = "" Then

gambar = Button1.BackgroundImage

Button1.BackgroundImage = Button4.BackgroundImage

Button4.BackgroundImage = gambar

smt = Button1.Text

Button1.Text = Button4.Text

Button4.Text = smt

End If

If Button1.Text = "1" And Button2.Text = "2" And Button3.Text = "3" And Button4.Text = "4" And Button5.Text = "5" And Button6.Text = "6" And Button7.Text = "7" And Button8.Text = "8" And Button9.Text = "" Then

MsgBox("SELAMAT")

End If

End Sub

Private Sub Button2\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button2.Click

If Button1.Text = "" Then

gambar = Button2.BackgroundImage

Button2.BackgroundImage = Button2.BackgroundImage

Button1.BackgroundImage = gambar

smt = Button2.Text

Button2.Text = Button1.Text

Button1.Text = smt

ElseIf Button3.Text = "" Then

gambar = Button2.BackgroundImage

Button2.BackgroundImage = Button3.BackgroundImage

Button3.BackgroundImage = gambar

smt = Button2.Text

Button2.Text = Button3.Text

Button3.Text = smt

ElseIf Button5.Text = "" Then

gambar = Button5.BackgroundImage

Button5.BackgroundImage = Button2.BackgroundImage

Button2.BackgroundImage = gambar

smt = Button5.Text

Button5.Text = Button2.Text

Button2.Text = smt

End If

If Button1.Text = "1" And Button2.Text = "2" And Button3.Text = "3" And Button4.Text = "4" And Button5.Text = "5" And Button6.Text = "6" And Button7.Text = "7" And Button8.Text = "8" And Button9.Text = "" Then

MsgBox("SELAMAT")

End If

End Sub

Private Sub Button3\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button3.Click

If Button2.Text = "" Then

gambar = Button3.BackgroundImage

Button3.BackgroundImage = Button2.BackgroundImage

Button2.BackgroundImage = gambar

smt = Button3.Text

Button3.Text = Button2.Text

Button2.Text = smt

ElseIf Button6.Text = "" Then

gambar = Button3.BackgroundImage

Button3.BackgroundImage = Button6.BackgroundImage

Button6.BackgroundImage = gambar

smt = Button3.Text

Button3.Text = Button6.Text

Button6.Text = smt

End If

If Button1.Text = "1" And Button2.Text = "2" And Button3.Text = "3" And Button4.Text = "4" And Button5.Text = "5" And Button6.Text = "6" And Button7.Text = "7" And Button8.Text = "8" And Button9.Text = "" Then

MsgBox("SELAMAT")

End If

End Sub

Private Sub Timer1\_Tick(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Timer1.Tick

gambar = Button9.BackgroundImage

Button9.BackgroundImage = Button4.BackgroundImage

Button4.BackgroundImage = gambar

smt = Button9.Text

Button9.Text = Button4.Text

Button4.Text = smt

gambar = Button9.BackgroundImage

Button9.BackgroundImage = Button3.BackgroundImage

Button3.BackgroundImage = gambar

smt = Button9.Text

Button9.Text = Button3.Text

Button3.Text = smt

gambar = Button2.BackgroundImage

Button2.BackgroundImage = Button7.BackgroundImage

Button7.BackgroundImage = gambar

smt = Button2.Text

Button2.Text = Button7.Text

Button7.Text = smt

gambar = Button2.BackgroundImage

Button2.BackgroundImage = Button6.BackgroundImage

Button6.BackgroundImage = gambar

smt = Button2.Text

Button2.Text = Button6.Text

Button6.Text = smt

gambar = Button3.BackgroundImage

Button3.BackgroundImage = Button8.BackgroundImage

Button8.BackgroundImage = gambar

smt = Button3.Text

Button3.Text = Button8.Text

Button8.Text = smt

gambar = Button3.BackgroundImage

Button3.BackgroundImage = Button1.BackgroundImage

Button1.BackgroundImage = gambar

smt = Button3.Text

Button3.Text = Button1.Text

Button1.Text = smt

gambar = Button5.BackgroundImage

Button5.BackgroundImage = Button8.BackgroundImage

Button8.BackgroundImage = gambar

smt = Button5.Text

Button5.Text = Button8.Text

Button8.Text = smt

gambar = Button5.BackgroundImage

Button5.BackgroundImage = Button7.BackgroundImage

Button7.BackgroundImage = gambar

smt = Button5.Text

Button5.Text = Button7.Text

Button7.Text = smt

gambar = Button6.BackgroundImage

Button6.BackgroundImage = Button1.BackgroundImage

Button1.BackgroundImage = gambar

smt = Button6.Text

Button6.Text = Button1.Text

Button1.Text = smt

End Sub

Private Sub Button4\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button4.Click

If Button1.Text = "" Then

gambar = Button4.BackgroundImage

Button4.BackgroundImage = Button1.BackgroundImage

Button1.BackgroundImage = gambar

smt = Button4.Text

Button4.Text = Button1.Text

Button1.Text = smt

ElseIf Button5.Text = "" Then

gambar = Button4.BackgroundImage

Button4.BackgroundImage = Button5.BackgroundImage

Button5.BackgroundImage = gambar

smt = Button4.Text

Button4.Text = Button5.Text

Button5.Text = smt

ElseIf Button7.Text = "" Then

gambar = Button4.BackgroundImage

Button4.BackgroundImage = Button7.BackgroundImage

Button7.BackgroundImage = gambar

smt = Button4.Text

Button4.Text = Button7.Text

Button7.Text = smt

End If

If Button1.Text = "1" And Button2.Text = "2" And Button3.Text = "3" And Button4.Text = "4" And Button5.Text = "5" And Button6.Text = "6" And Button7.Text = "7" And Button8.Text = "8" And Button9.Text = "" Then

MsgBox("SELAMAT")

End If

End Sub

Private Sub Button5\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button5.Click

If Button2.Text = "" Then

gambar = Button5.BackgroundImage

Button5.BackgroundImage = Button2.BackgroundImage

Button2.BackgroundImage = gambar

smt = Button5.Text

Button5.Text = Button2.Text

Button2.Text = smt

ElseIf Button4.Text = "" Then

gambar = Button5.BackgroundImage

Button5.BackgroundImage = Button4.BackgroundImage

Button4.BackgroundImage = gambar

smt = Button5.Text

Button5.Text = Button4.Text

Button4.Text = smt

ElseIf Button6.Text = "" Then

gambar = Button5.BackgroundImage

Button5.BackgroundImage = Button6.BackgroundImage

Button6.BackgroundImage = gambar

smt = Button5.Text

Button5.Text = Button6.Text

Button6.Text = smt

ElseIf Button8.Text = "" Then

gambar = Button5.BackgroundImage

Button5.BackgroundImage = Button8.BackgroundImage

Button8.BackgroundImage = gambar

smt = Button5.Text

Button5.Text = Button8.Text

Button8.Text = smt

End If

If Button1.Text = "1" And Button2.Text = "2" And Button3.Text = "3" And Button4.Text = "4" And Button5.Text = "5" And Button6.Text = "6" And Button7.Text = "7" And Button8.Text = "8" And Button9.Text = "" Then

MsgBox("SELAMAT")

End If

End Sub

Private Sub Button6\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button6.Click

If Button3.Text = "" Then

gambar = Button6.BackgroundImage

Button6.BackgroundImage = Button3.BackgroundImage

Button3.BackgroundImage = gambar

smt = Button6.Text

Button6.Text = Button3.Text

Button3.Text = smt

ElseIf Button5.Text = "" Then

gambar = Button6.BackgroundImage

Button6.BackgroundImage = Button5.BackgroundImage

Button5.BackgroundImage = gambar

smt = Button6.Text

Button6.Text = Button5.Text

Button5.Text = smt

ElseIf Button9.Text = "" Then

gambar = Button6.BackgroundImage

Button6.BackgroundImage = Button9.BackgroundImage

Button9.BackgroundImage = gambar

smt = Button6.Text

Button6.Text = Button9.Text

Button9.Text = smt

End If

If Button1.Text = "1" And Button2.Text = "2" And Button3.Text = "3" And Button4.Text = "4" And Button5.Text = "5" And Button6.Text = "6" And Button7.Text = "7" And Button8.Text = "8" And Button9.Text = "" Then

MsgBox("SELAMAT")

End If

End Sub

Private Sub Button7\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button7.Click

If Button4.Text = "" Then

gambar = Button7.BackgroundImage

Button7.BackgroundImage = Button4.BackgroundImage

Button4.BackgroundImage = gambar

smt = Button7.Text

Button7.Text = Button4.Text

Button4.Text = smt

ElseIf Button8.Text = "" Then

gambar = Button7.BackgroundImage

Button7.BackgroundImage = Button8.BackgroundImage

Button8.BackgroundImage = gambar

smt = Button7.Text

Button7.Text = Button8.Text

Button8.Text = smt

End If

If Button1.Text = "1" And Button2.Text = "2" And Button3.Text = "3" And Button4.Text = "4" And Button5.Text = "5" And Button6.Text = "6" And Button7.Text = "7" And Button8.Text = "8" And Button9.Text = "" Then

MsgBox("SELAMAT")

End If

End Sub

Private Sub Button8\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button8.Click

If Button7.Text = "" Then

gambar = Button8.BackgroundImage

Button8.BackgroundImage = Button7.BackgroundImage

Button7.BackgroundImage = gambar

smt = Button8.Text

Button8.Text = Button7.Text

Button7.Text = smt

ElseIf Button5.Text = "" Then

gambar = Button8.BackgroundImage

Button8.BackgroundImage = Button5.BackgroundImage

Button5.BackgroundImage = gambar

smt = Button8.Text

Button8.Text = Button5.Text

Button5.Text = smt

ElseIf Button9.Text = "" Then

gambar = Button8.BackgroundImage

Button8.BackgroundImage = Button9.BackgroundImage

Button9.BackgroundImage = gambar

smt = Button8.Text

Button8.Text = Button9.Text

Button9.Text = smt

End If

If Button1.Text = "1" And Button2.Text = "2" And Button3.Text = "3" And Button4.Text = "4" And Button5.Text = "5" And Button6.Text = "6" And Button7.Text = "7" And Button8.Text = "8" And Button9.Text = "" Then

MsgBox("SELAMAT")

End If

End Sub

Private Sub Button9\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button9.Click

If Button6.Text = "" Then

gambar = Button9.BackgroundImage

Button9.BackgroundImage = Button6.BackgroundImage

Button6.BackgroundImage = gambar

smt = Button9.Text

Button9.Text = Button6.Text

Button6.Text = smt

ElseIf Button8.Text = "" Then

gambar = Button9.BackgroundImage

Button9.BackgroundImage = Button8.BackgroundImage

Button8.BackgroundImage = gambar

smt = Button9.Text

Button9.Text = Button8.Text

Button8.Text = smt

End If

If Button1.Text = "1" And Button2.Text = "2" And Button3.Text = "3" And Button4.Text = "4" And Button5.Text = "5" And Button6.Text = "6" And Button7.Text = "7" And Button8.Text = "8" And Button9.Text = "" Then

MsgBox("SELAMAT")

End If

End Sub

Private Sub Button12\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button12.Click

Me.Close()

End Sub

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

CenterToScreen()

End Sub

Private Sub Button13\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Button13.Click

Button10.Enabled = True

Button11.Enabled = True

Button1.BackgroundImage = puzzle.My.Resources.\_1

Button2.BackgroundImage = puzzle.My.Resources.\_2

Button3.BackgroundImage = puzzle.My.Resources.\_3

Button4.BackgroundImage = puzzle.My.Resources.\_4

Button5.BackgroundImage = puzzle.My.Resources.\_5

Button6.BackgroundImage = puzzle.My.Resources.\_6

Button7.BackgroundImage = puzzle.My.Resources.\_7

Button8.BackgroundImage = puzzle.My.Resources.\_8

Button9.BackgroundImage = puzzle.My.Resources.\_9

Button1.Text = "1"

Button2.Text = "2"

Button3.Text = "3"

Button4.Text = "4"

Button5.Text = "5"

Button6.Text = "6"

Button7.Text = "7"

Button8.Text = "8"

Button9.Text = ""

Timer2.Enabled = False

Label1.Text = ""

End Sub

Private Sub Label3\_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Label4.Click

End Sub

Private Sub Timer2\_Tick(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles Timer2.Tick

timeLeft = startTime.Subtract(Now)

If Not timeLeft.Milliseconds < 0 Then

Label4.Text = Format(timeleft.Minutes, "#0") & " Mins" & " " & Format(timeleft.Seconds, "00") & " Secs"

Else

Timer2.Enabled = False

If MsgBox("Wanna Try Again?", vbQuestion + vbYesNo, "Game Over!") = vbYes Then

Button10.Enabled = True

Button11.Enabled = True

Button1.BackgroundImage = puzzle.My.Resources.\_1

Button2.BackgroundImage = puzzle.My.Resources.\_2

Button3.BackgroundImage = puzzle.My.Resources.\_3

Button4.BackgroundImage = puzzle.My.Resources.\_4

Button5.BackgroundImage = puzzle.My.Resources.\_5

Button6.BackgroundImage = puzzle.My.Resources.\_6

Button7.BackgroundImage = puzzle.My.Resources.\_7

Button8.BackgroundImage = puzzle.My.Resources.\_8

Button9.BackgroundImage = puzzle.My.Resources.\_9

Button1.Text = "1"

Button2.Text = "2"

Button3.Text = "3"

Button4.Text = "4"

Button5.Text = "5"

Button6.Text = "6"

Button7.Text = "7"

Button8.Text = "8"

Button9.Text = ""

Timer2.Enabled = False

Label1.Text = ""

Else

Close()

End If

End If

End Sub

Private Sub TextBox1\_keypress(ByVal sender As System.Object, ByVal e As System.Windows.Forms.KeyPressEventArgs) Handles TextBox1.KeyPress

Dim a As Boolean = Char.IsDigit(e.KeyChar)

If Not a Then e.Handled = True

End Sub

End Class

**Fomr mnfrm ( Form Start Game )**

Imports System

Imports System.Drawing

Imports System.Collections

Imports System.ComponentModel

Imports System.Windows.Forms

Imports System.Data

' Here all the coding for the game is done

Namespace slidePuzzle

'A structure for keeping info on the row and column

'of a block, works very similar to POINT

Structure Block

Public Row, Col As Integer

Public Sub New(ByVal row As Integer, ByVal col As Integer)

Me.Row = row

Me.Col = col

End Sub

End Structure

Public Class mnfrm

Inherits System.Windows.Forms.Form

#Region "Private Fields"

'Private Fields

' the tiles width/Height size

Const tSquare As Integer = 96

' the image size in the tile

' here the image width and height

'are both equal to tImageW

Const tImageW As Integer = 94

' Number of rows in the Grid (Default)

Dim nRows As Integer = 3

' Number of Columns in the Grid (Default)

Dim nCols As Integer = 3

' rand variable is used in shuffling

' the tiles

Dim rand As Random

' blankTile will keep information

' about the empty block and its

' location(Row, Col) in the Grid

Dim blankTile As Block

'Check if a picture is loaded into the puzzle

'or not

Dim PictureLoaded As Boolean = False

Dim timerCountdown As Integer ' the timers total time

' a temproray tile, which hold info

' on the last tile in the grid

Friend WithEvents tmplasttile As ctlTile

' the tiles used to build the puzzle

Private tile(,) As ctlTile

Friend WithEvents mainMenu1 As System.Windows.Forms.MainMenu

Friend WithEvents menuLoad As System.Windows.Forms.MenuItem

Friend WithEvents menuShuffle As System.Windows.Forms.MenuItem

Friend WithEvents menuSize As System.Windows.Forms.MenuItem

Friend WithEvents menuBack As System.Windows.Forms.MenuItem

Friend WithEvents menuQuit As System.Windows.Forms.MenuItem

Friend WithEvents menu3X3 As System.Windows.Forms.MenuItem

Friend WithEvents menu4X4 As System.Windows.Forms.MenuItem

Friend WithEvents menu5X5 As System.Windows.Forms.MenuItem

Friend WithEvents openFile As System.Windows.Forms.OpenFileDialog

Friend WithEvents menuGridColor As System.Windows.Forms.MenuItem

Friend WithEvents menuWhite As System.Windows.Forms.MenuItem

Friend WithEvents menuGreen As System.Windows.Forms.MenuItem

Friend WithEvents menuBlue As System.Windows.Forms.MenuItem

Friend WithEvents menuRed As System.Windows.Forms.MenuItem

Friend WithEvents ContextMenuStrip1 As System.Windows.Forms.ContextMenuStrip

Friend WithEvents menuSilver As System.Windows.Forms.MenuItem

#End Region

#Region " Windows Form Designer generated code "

Public Sub New()

MyBase.New()

'This call is required by the Windows Form Designer.

InitializeComponent()

'Add any initialization after the InitializeComponent() call

End Sub

'Form overrides dispose to clean up the component list.

Protected Overloads Overrides Sub Dispose(ByVal disposing As Boolean)

If disposing Then

If Not (components Is Nothing) Then

components.Dispose()

End If

End If

MyBase.Dispose(disposing)

End Sub

'Required by the Windows Form Designer

Private components As System.ComponentModel.IContainer

'NOTE: The following procedure is required by the Windows Form Designer

'It can be modified using the Windows Form Designer.

'Do not modify it using the code editor.

Friend WithEvents tRandom As System.Windows.Forms.Timer

Private WithEvents tilesPanel As System.Windows.Forms.Panel

<System.Diagnostics.DebuggerStepThrough()> Private Sub InitializeComponent()

Me.components = New System.ComponentModel.Container()

Me.tilesPanel = New System.Windows.Forms.Panel()

Me.mainMenu1 = New System.Windows.Forms.MainMenu(Me.components)

Me.menuLoad = New System.Windows.Forms.MenuItem()

Me.menuShuffle = New System.Windows.Forms.MenuItem()

Me.menuSize = New System.Windows.Forms.MenuItem()

Me.menu3X3 = New System.Windows.Forms.MenuItem()

Me.menu4X4 = New System.Windows.Forms.MenuItem()

Me.menu5X5 = New System.Windows.Forms.MenuItem()

Me.menuQuit = New System.Windows.Forms.MenuItem()

Me.menuBack = New System.Windows.Forms.MenuItem()

Me.menuGridColor = New System.Windows.Forms.MenuItem()

Me.menuWhite = New System.Windows.Forms.MenuItem()

Me.menuGreen = New System.Windows.Forms.MenuItem()

Me.menuBlue = New System.Windows.Forms.MenuItem()

Me.menuRed = New System.Windows.Forms.MenuItem()

Me.menuSilver = New System.Windows.Forms.MenuItem()

Me.openFile = New System.Windows.Forms.OpenFileDialog()

Me.tRandom = New System.Windows.Forms.Timer(Me.components)

Me.ContextMenuStrip1 = New System.Windows.Forms.ContextMenuStrip(Me.components)

Me.SuspendLayout()

'

'tilesPanel

'

Me.tilesPanel.BackColor = System.Drawing.Color.PaleGreen

Me.tilesPanel.BorderStyle = System.Windows.Forms.BorderStyle.Fixed3D

Me.tilesPanel.Location = New System.Drawing.Point(14, 3)

Me.tilesPanel.Name = "tilesPanel"

Me.tilesPanel.Size = New System.Drawing.Size(272, 224)

Me.tilesPanel.TabIndex = 0

'

'mainMenu1

'

Me.mainMenu1.MenuItems.AddRange(New System.Windows.Forms.MenuItem() {Me.menuLoad, Me.menuShuffle, Me.menuSize, Me.menuQuit, Me.menuBack, Me.menuGridColor})

'

'menuLoad

'

Me.menuLoad.Index = 0

Me.menuLoad.Text = "Load Picture"

'

'menuShuffle

'

Me.menuShuffle.Enabled = False

Me.menuShuffle.Index = 1

Me.menuShuffle.Text = "Shuffle"

'

'menuSize

'

Me.menuSize.Index = 2

Me.menuSize.MenuItems.AddRange(New System.Windows.Forms.MenuItem() {Me.menu3X3, Me.menu4X4, Me.menu5X5})

Me.menuSize.RadioCheck = True

Me.menuSize.Text = "Size"

'

'menu3X3

'

Me.menu3X3.Checked = True

Me.menu3X3.DefaultItem = True

Me.menu3X3.Index = 0

Me.menu3X3.RadioCheck = True

Me.menu3X3.Text = "3 x 3"

'

'menu4X4

'

Me.menu4X4.Index = 1

Me.menu4X4.RadioCheck = True

Me.menu4X4.Text = "4 x 4"

'

'menu5X5

'

Me.menu5X5.Index = 2

Me.menu5X5.RadioCheck = True

Me.menu5X5.Text = "5 x 5"

'

'menuQuit

'

Me.menuQuit.Index = 5

Me.menuQuit.Text = "Quit Game"

'

'menuBack

'

Me.menuBack.Index = 4

Me.menuBack.Text = "Back"

'

'menuGridColor

'

Me.menuGridColor.Enabled = False

Me.menuGridColor.Index = 5

Me.menuGridColor.MenuItems.AddRange(New System.Windows.Forms.MenuItem() {Me.menuWhite, Me.menuGreen, Me.menuBlue, Me.menuRed, Me.menuSilver})

Me.menuGridColor.Text = " Color"

'

'menuWhite

'

Me.menuWhite.Index = 0

Me.menuWhite.Text = "White"

'

'menuGreen

'

Me.menuGreen.Checked = True

Me.menuGreen.DefaultItem = True

Me.menuGreen.Index = 1

Me.menuGreen.Text = "Green"

'

'menuBlue

'

Me.menuBlue.Index = 2

Me.menuBlue.Text = "Blue"

'

'menuRed

'

Me.menuRed.Index = 3

Me.menuRed.Text = "Red"

'

'menuSilver

'

Me.menuSilver.Index = 4

Me.menuSilver.Text = "Silver"

'

'tRandom

'

'

'ContextMenuStrip1

'

Me.ContextMenuStrip1.Name = "ContextMenuStrip1"

Me.ContextMenuStrip1.Size = New System.Drawing.Size(61, 4)

'

'mnfrm

'

Me.AutoScaleBaseSize = New System.Drawing.Size(5, 13)

Me.ClientSize = New System.Drawing.Size(301, 199)

Me.Controls.Add(Me.tilesPanel)

Me.MaximizeBox = False

Me.Menu = Me.mainMenu1

Me.Name = "mnfrm"

Me.StartPosition = System.Windows.Forms.FormStartPosition.CenterScreen

Me.Text = "Tiles Slide Puzzle"

Me.ResumeLayout(False)

End Sub

#End Region

#Region "Load mnfrm"

'This function is called when the user

'uses the menu to load an image

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

MakeTiles(nRows, nCols)

End Sub

#End Region

#Region "Randomize and Timer event"

' This function shuffles the tiles in the gird

Protected Sub Randomize()

rand = New Random()

timerCountdown = 64 \* nRows \* nCols

'timer.Tick += new EventHandler(TimerOnTick);

tRandom.Interval = 1

tRandom.Enabled = True

End Sub

' Here a new location for moving a tile

' in the shuffling process is randomly

' made, on the condition to be in the limits

' of the puzzle's grid size.

Private Sub TimerOnTick(ByVal obj As Object, ByVal ea As EventArgs) Handles tRandom.Tick

Dim col As Integer = blankTile.Col

Dim row As Integer = blankTile.Row

Select Case (rand.Next(4))

Case 0 : col += 1

Case 1 : col -= 1

Case 2 : row += 1

Case 3 : row -= 1

End Select

If (col >= 0 And col < nCols And row >= 0 And row < nRows) Then

' after making a random location

' the tile is moved to that location

MoveTile(col, row)

End If

timerCountdown = timerCountdown - 1

If (timerCountdown = 0) Then

tRandom.Stop()

End If

End Sub

#End Region

#Region "Move Tile (int Col, Int Row)"

' This function handles moving a tile

' to a new location in the grid

Private Sub MoveTile(ByVal Col As Integer, ByVal Row As Integer)

tile(Row, Col).Location = New Point(blankTile.Col \* tSquare, \_

blankTile.Row \* tSquare)

tile(blankTile.Row, blankTile.Col) = tile(Row, Col)

tile(Row, Col) = Nothing

blankTile = New Block(Row, Col)

End Sub

#End Region

#Region "Make Tiles (int Rows, int Cols)"

' This function builds the tiles in the grid

' and arranges them

Public Sub MakeTiles(ByVal Rows As Integer, ByVal Cols As Integer)

Dim index As Integer = 0

ReDim tile(Rows, Cols)

tilesPanel.Size = New Size(tSquare \* Rows + 4, tSquare \* Cols + 4)

tilesPanel.Location = New Point(4, 4)

Me.ClientSize = New Size(tilesPanel.Size.Width + 8, tilesPanel.Size.Height + 30)

Dim Row, Col As Integer

For Row = 0 To Rows - 1

For Col = 0 To Cols - 1

tile(Row, Col) = New ctlTile(tSquare, tSquare, index)

tile(Row, Col).Parent = Me.tilesPanel

tile(Row, Col).Location = New Point(Col \* tSquare, Row \* tSquare)

index += 1

Next

Next

End Sub

#End Region

#Region "KeyBoard and Mouse events"

' Here all the key events handled in the puzzle

' are identified

Private Sub mnfrm\_KeyDown(ByVal sender As Object, ByVal e As System.Windows.Forms.KeyEventArgs) Handles MyBase.KeyDown

' Check if the game is shuffled

' or not

If ((menuShuffle.Enabled) Or (PictureLoaded = False)) Then Return

' Arrow Keys Left

If (e.KeyCode = Keys.Left And blankTile.Col < nCols - 1) Then

MoveTile(blankTile.Col + 1, blankTile.Row)

' Arrow Keys Right

ElseIf (e.KeyCode = Keys.Right And blankTile.Col > 0) Then

MoveTile(blankTile.Col - 1, blankTile.Row)

' Arrow Keys Up

ElseIf (e.KeyCode = Keys.Up And blankTile.Row < nRows - 1) Then

MoveTile(blankTile.Col, blankTile.Row + 1)

' Arrow Keys Down

ElseIf (e.KeyCode = Keys.Down And blankTile.Row > 0) Then

MoveTile(blankTile.Col, blankTile.Row - 1)

End If

e.Handled = True 'Handle the event !!

CheckFinish() 'Check if the puzzle is solved

End Sub

' Here all the mouse events handled in the puzzle

' are identified

Private Sub tilesPanel\_MouseDown(ByVal sender As Object, ByVal e As System.Windows.Forms.MouseEventArgs) Handles tilesPanel.MouseDown

' Check if the game is shuffled

' or not

If ((menuShuffle.Enabled) Or (PictureLoaded = False)) Then Return

Dim Col As Integer = e.X \ tSquare 'integer division

Dim Row As Integer = e.Y \ tSquare 'integer division

If (Col = blankTile.Col) Then

If (Row < blankTile.Row) Then

Dim Row2 As Integer

For Row2 = blankTile.Row - 1 To Row Step -1

MoveTile(Col, Row2)

Next

ElseIf (Row > blankTile.Row) Then

Dim Row2 As Integer

For Row2 = blankTile.Row + 1 To Row

MoveTile(Col, Row2)

Next

End If

ElseIf (Row = blankTile.Row) Then

If (Col < blankTile.Col) Then

Dim Col2 As Integer

For Col2 = blankTile.Col - 1 To Col Step -1

MoveTile(Col2, Row)

Next

ElseIf (Col > blankTile.Col) Then

Dim Col2 As Integer

For Col2 = blankTile.Col + 1 To Col

MoveTile(Col2, Row)

Next

End If

End If

CheckFinish() ' Check if the puzzle is solved

End Sub

#End Region

#Region "Check tiles if rearranged Correctly"

' this Method checks if the tiles are rearranged in the

' correct order, if so the game is said to be over and

' the player is congratulated :)

Private Sub CheckFinish()

Dim Finished As Boolean = True

Dim index As Integer = 0

Dim Row, Col As Integer

For Row = 0 To nRows - 1

For Col = 0 To nCols - 1

If ((index <> nRows \* nCols) And Not (tile(Row, Col) Is Nothing)) Then

Finished = Finished And (tile(Row, Col).tIndex = index)

End If

index += 1

If Not (Finished) Then Return

Next

Next

If (Finished) Then

tile(nRows - 1, nCols - 1) = tmplasttile

tile(nRows - 1, nCols - 1).Visible = True

MessageBox.Show("Congratulations!!, You did it !!", "Game Over", \_

System.Windows.Forms.MessageBoxButtons.OK, System.Windows.Forms.MessageBoxIcon.Exclamation)

blankTile = New Block(nRows - 1, nCols - 1)

menuShuffle.Enabled = True

menuGridColor.Enabled = False

End If

End Sub

#End Region

#Region "Load an Image to the Grid"

' This method handles the image loading prosses

' also here the image is cut into block (nRows by nCols)

' then pasted on the tiles in the grid

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

openFile.FileName = ""

' the formats acceptable

openFile.Filter = "All Picture Files (\*.jpg,\*.bmp,\*.gif)|\*.jpg;\*.bmp;\*.gif"

openFile.ShowDialog()

If (openFile.FileName = "") Then

menuShuffle.Enabled = False

menuGridColor.Enabled = True

Return

End If

Dim Row, Col As Integer

For Row = 0 To nRows - 1

For Col = 0 To nCols - 1

Try

tile(Row, Col).Dispose()

Catch

'Do nothing

End Try

Next

Next

MakeTiles(nRows, nCols)

Dim cxThumbnail As Integer = tImageW \* nRows

Dim cyThumbnail As Integer = tImageW \* nRows

Dim Pic As Image = Image.FromFile(openFile.FileName)

Pic = Pic.GetThumbnailImage(cxThumbnail, cyThumbnail, Nothing, System.IntPtr.Zero)

Console.WriteLine(tile(0, 0).Location)

For Row = 0 To nRows - 1

For Col = 0 To nCols - 1

tile(Row, Col).tilePicture(Pic, New Point(Col \* tImageW, Row \* tImageW))

Next

Next

blankTile = New Block(nRows - 1, nCols - 1)

menuShuffle.Enabled = True

menuGridColor.Enabled = False

PictureLoaded = True

End Sub

#End Region

#Region "menu Shuffle the Tiles"

' This method calls the Randomize function

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

menuShuffle.Enabled = False

menuGridColor.Enabled = True

tmplasttile = tile(nRows - 1, nCols - 1)

tmplasttile.Visible = False

tile(nRows - 1, nCols - 1).Visible = False

Randomize()

End Sub

#End Region

#Region "menu SIZE"

' Here all the sizing process is done, care must be taken

' that if the grid size is changed the tiles are cleared

' for a new game!!

' This method sets the grid to 3X3 (3 Rows by 3 Columns)

Private Sub menu3X3\_Click(ByVal sender As Object, ByVal e As System.EventArgs) Handles menu3X3.Click

If (menu3X3.Checked) Then Return

clearItems()

menu3X3.Checked = True

nRows = 3

nCols = 3

MakeTiles(nRows, nCols)

End Sub

' This method sets the grid to 4X4 (4 Rows by 4 Columns)

Private Sub menu4X4\_Click(ByVal sender As Object, ByVal e As System.EventArgs) Handles menu4X4.Click

If (menu4X4.Checked) Then Return

clearItems()

menu4X4.Checked = True

nRows = 4

nCols = 4

MakeTiles(nRows, nCols)

End Sub

' This method sets the grid to 5X5 (5 Rows by 5 Columns)

Private Sub menu5X5\_Click(ByVal sender As Object, ByVal e As System.EventArgs) Handles menu5X5.Click

If (menu5X5.Checked) Then Return

clearItems()

menu5X5.Checked = True

nRows = 5

nCols = 5

MakeTiles(nRows, nCols)

End Sub

' This function clears all the check marks in the Size menu

Private Sub clearItems()

menu3X3.Checked = False

menu4X4.Checked = False

menu5X5.Checked = False

Dim Row, Col As Integer

For Row = 0 To nRows - 1

For Col = 0 To nCols - 1

Try

tile(Row, Col).Dispose()

Catch

'do nothing

End Try

Next

Next

menuShuffle.Enabled = False

menuGridColor.Enabled = True

PictureLoaded = False

End Sub

#End Region

#Region "Grid Color"

' Here the menu Color Grid processing

' is handled

Private Sub ClearColors()

menuWhite.Checked = False

menuGreen.Checked = False

menuBlue.Checked = False

menuRed.Checked = False

menuSilver.Checked = False

End Sub

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

ClearColors()

menuWhite.Checked = True

Me.tilesPanel.BackColor = Color.LightYellow

End Sub

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

ClearColors()

menuWhite.Checked = True

Me.tilesPanel.BackColor = Color.PaleGreen

End Sub

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

ClearColors()

menuWhite.Checked = True

Me.tilesPanel.BackColor = Color.LightBlue

End Sub

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

ClearColors()

menuWhite.Checked = True

Me.tilesPanel.BackColor = Color.LightCoral

End Sub

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

ClearColors()

menuWhite.Checked = True

Me.tilesPanel.BackColor = Color.Silver

End Sub

#End Region

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

FUtama.Show()

Me.Hide()

End Sub

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

Me.Close()

End Sub

End Class

End Namespace

**Form About**

Public Class FAbout

Private Sub BackToolStripMenuItem\_Click(sender As Object, e As EventArgs) Handles BackToolStripMenuItem.Click

FUtama.Show()

Me.Hide()

End Sub

Private Sub ExitToolStripMenuItem\_Click(sender As Object, e As EventArgs) Handles ExitToolStripMenuItem.Click

End

End Sub

End Class

**Output Program :**













