**LEMBAR JAWAB LATIHAN SOAL**

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**LINK GITHUB :** <https://github.com/AndreaB54/Pemrograman_Desktop/tree/main/%23Folder%20Pertemuan%2012>

**Latihan Pengamatan :**

1. Buatlah agar Pacman menghadap ke arah yang sesuai saat bergerak!

Dim pac\_kanan As Image = Image.FromFile("..\aset\_game\_pakman\pakman.png")

Dim pac\_kiri As Image = Image.FromFile("..\aset\_game\_pakman\pakman3.png")

Dim pac\_atas As Image = Image.FromFile("..\aset\_game\_pakman\pakman4.png")

Dim pac\_bawah As Image = Image.FromFile("..\aset\_game\_pakman\pakman2.png")

Dim pac As Image = pac\_kanan

Private Sub Form1\_KeyDown(ByVal sender As Object, ByVal e As System.Windows.Forms.KeyEventArgs) Handles Me.KeyDown

Select Case e.KeyCode

Case Keys.Up

If map(pacy - 1, pacx) = 1 Then

pacy = pacy - 1

pac = pac\_atas

End If

Case Keys.Down

If map(pacy + 1, pacx) = 1 Then

pacy = pacy + 1

pac = pac\_bawah

End If

Case Keys.Right

If map(pacy, pacx + 1) = 1 Then

pacx = pacx + 1

pac = pac\_kanan

End If

Case Keys.Left

If map(pacy, pacx - 1) = 1 Then

pacx = pacx - 1

pac = pac\_kiri

End If

End Select

Redraw()

End Sub

1. Tambahkan variable nyawa, tampilkan dalam bentuk sprite dan modifikasi kode program agar permainan baru akan selesai setelah Pacman tertangkap 3 kali oleh Hantu!

Dim nyawa As Integer = 3

Dim heart As Image = Image.FromFile("..\aset\_game\_pakman\heart.png")

Private Sub Redraw()

'kode biasanya

'gambarkan nyawa dipojok atas

For i As Integer = 0 To nyawa - 1

g.DrawImage(heart, i \* tsz, 0, tsz, tsz)

Next

PictureBox1.Refresh()

End Sub

Private Sub ResetPositions()

pacx = 1

pacy = 1

oldpacx = pacx

oldpacy = pacy

End Sub

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

'kode seperti biasa

'cek apakah posisi pacman sama dengan musuh

If (pacx = enmx) And (pacy = enmy) Then

Timer1.Stop()

nyawa -= 1

If nyawa <= 0 Then

Timer1.Enabled = False

MsgBox("Game Over! Pacman Dies!")

Else

MsgBox("Caught! Lives left: " & nyawa)

ResetPositions()

Timer1.Start()

End If

Return

End If

'cek apakah posisi pacman sama dengan rumah

If (pacx = goalx) And (pacy = goaly) Then

Timer1.Enabled = False

MsgBox("Pacman safe at Home!")

Return

End If

Redraw()

End Sub

**Latihan Pengembangan :**

1. Tambahkan Hantu lebih banyak lagi menjadi 3 buah Hantu! Jika perlu memperluas papan permainan, lakukan!

Dim map = {

{0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0},

{0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0},

{0, 1, 0, 0, 0, 1, 0, 0, 0, 1, 0},

{0, 1, 1, 1, 1, 1, 0, 1, 1, 1, 0},

{0, 1, 0, 0, 0, 1, 0, 1, 1, 0, 0},

{0, 1, 0, 1, 1, 1, 1, 1, 1, 1, 0},

{0, 1, 0, 1, 0, 1, 0, 1, 0, 1, 0},

{0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0},

{0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 0},

{0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 0},

{0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0},

{0, 1, 0, 1, 1, 1, 1, 1, 0, 1, 0},

{0, 1, 0, 0, 0, 1, 0, 1, 0, 1, 0},

{0, 1, 1, 1, 1, 1, 0, 1, 1, 1, 0},

{0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}}

Dim enmx = 5

Dim enmy = 7

Dim enmx2 = 5

Dim enmy2 = 7

Dim enmx3 = 5

Dim enmy3 = 7

Dim enm As Image = Image.FromFile("..\aset\_game\_pakman\hantu3.png")

Dim enm2 As Image = Image.FromFile("..\aset\_game\_pakman\hantu2.png")

Dim enm3 As Image = Image.FromFile("..\aset\_game\_pakman\hantu1.png")

Private Sub Redraw()

‘kode lain

'gambarkan musuh

g.DrawImage(enm, enmx \* tsz, enmy \* tsz, tsz, tsz)

g.DrawImage(enm2, enmx2 \* tsz, enmy2 \* tsz, tsz, tsz)

g.DrawImage(enm3, enmx3 \* tsz, enmy3 \* tsz, tsz, tsz)

End Sub

Private Sub EnemyMove(px As Integer, py As Integer, ByRef ex As Integer, ByRef ey As Integer, Optional seed As Integer = 0)

Dim rnd As New Random(Environment.TickCount + seed)

Dim dx = Math.Abs(px - ex)

Dim dy = Math.Abs(py - ey)

Dim arah As Integer

If dx > dy Then

arah = If(px > ex, 1, 3)

ElseIf dy > dx Then

arah = If(py > ey, 2, 0)

Else

arah = rnd.Next(0, 4)

End If

Select Case arah

Case 0

If map(ey - 1, ex) = 1 Then ey -= 1

Case 1

If map(ey, ex + 1) = 1 Then ex += 1

Case 2

If map(ey + 1, ex) = 1 Then ey += 1

Case 3

If map(ey, ex - 1) = 1 Then ex -= 1

End Select

End Sub

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

EnemyMove(pacx, pacy, enmx, enmy, 1)

EnemyMove(pacx, pacy, enmx2, enmy2, 2)

EnemyMove(pacx, pacy, enmx3, enmy3, 3)

' Cek tabrakan

If (pacx = enmx And pacy = enmy) Or (pacx = enmx2 And pacy = enmy2) Or (pacx = enmx3 And pacy = enmy3) Then

Timer1.Stop()

nyawa -= 1

If nyawa <= 0 Then

Timer1.Enabled = False

MsgBox("Game Over! Pacman Dies!")

Else

MsgBox("Caught! Lives left: " & nyawa)

ResetPositions()

Timer1.Start()

End If

Return

End If

If (pacx = goalx) And (pacy = goaly) Then

Timer1.Enabled = False

MsgBox("Pacman safe at Home!")

Return

End If

Redraw()

End Sub