

Lindenmayer

```
1 Global winkel,x_old,y_old,x_new,y_new

2     winkel = 90
3     width = 1400
4     height = 800
5     x_old = 500
6     y_old = 500

7     Procedure move(entfernung)
8         radiant.f = -1*3.141/180*winkel
9         x_new = x_old + entfernung * Cos(radiant)
10        y_new = y_old + entfernung * Sin(radiant)
11
12        LineXY(x_old,y_old,x_new,y_new,RGB(255,255,255))
13        x_old = x_new
14        y_old = y_new
15    EndProcedure

16    Procedure turn (Drehwinkel)
17        winkel = winkel + Drehwinkel
18        If winkel >= 360
19            winkel = winkel-360
20        EndIf
21        If winkel <= -360
22            winkel = winkel+360
23        EndIf
24    EndProcedure

25    Structure Knoten
26        x.w
27        y.w
28        n.w
29    EndStructure
30
31    Global NewList Knotenliste.Knoten()

32    generator.s = "F[+X]-X"
33    Global Zeichenkette.s = "X"
```

```

1      If OpenWindow(0, 0, 0, Width, Height, "TurtleGrafik", #PB_Window_SystemMenu
2                                     | #PB_Window_ScreenCentered)
3      StartDrawing(WindowOutput(0))
4      Box(0,0,Width,Height,RGB(0,0,0))
5
6      For n = 1 To 14
7          Zeichenkette = ReplaceString(Zeichenkette, "X", generator )
8      Next n
9      Zeichenkette = ReplaceString(Zeichenkette, "X", "F" )
10
11     ; DrawText(20, 40, Zeichenkette)

12 For i = 1 To Len(Zeichenkette)
13     Select Mid(Zeichenkette,i,1)
14         Case "F"
15             move(30)
16
17         Case "+"
18             turn(15)
19
20         Case "-"
21             turn(-15)
22
23         Case "["
24             AddElement(Knotenliste( ))
25             Knotenliste( )\x = x_old
26             Knotenliste( )\y = y_old
27             Knotenliste( )\n = winkel
28
29         Case "]"
30             LastElement(Knotenliste( ))
31             x_old = Knotenliste( )\x
32             y_old = Knotenliste( )\y
33             winkel = Knotenliste( )\n
34             DeleteElement(Knotenliste( ))
35
36     EndSelect
37 Next i

38     Repeat : EventID = WaitWindowEvent( ):
39     Until EventId = #PB_Event_CloseWindow
40
EndIf

```