3. CONDITIONAL STATEMENTS

3.1. OPERATOR IF…THEN…ELSE…

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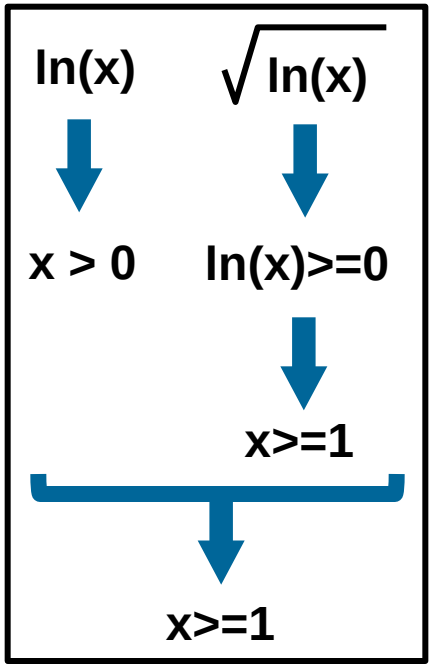
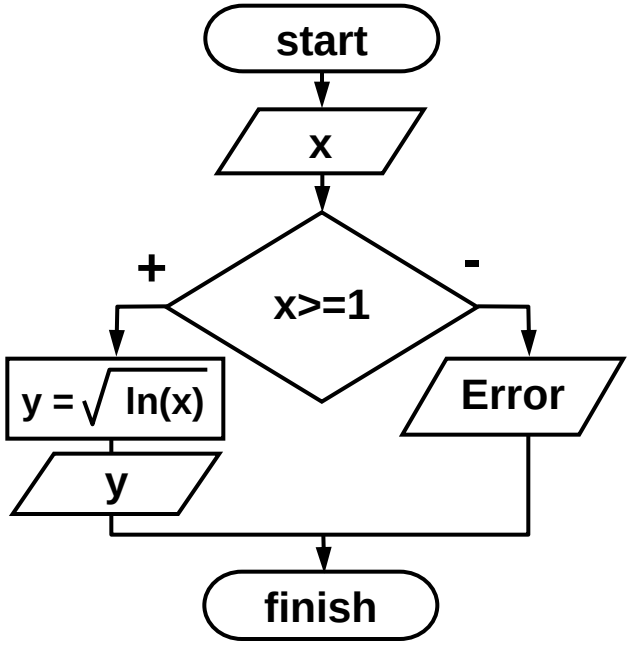
Conditional structure

algorithm for executing of the alternative sequences of actions

```
If <condition operator> Then
<actions in case of "True" value of condition operator>
Else
<actions in case of "False" value of condition operator>
End If
```

Program for calculate $y = \sqrt{\ln(x)}$, 'x' is typed by user during runtime



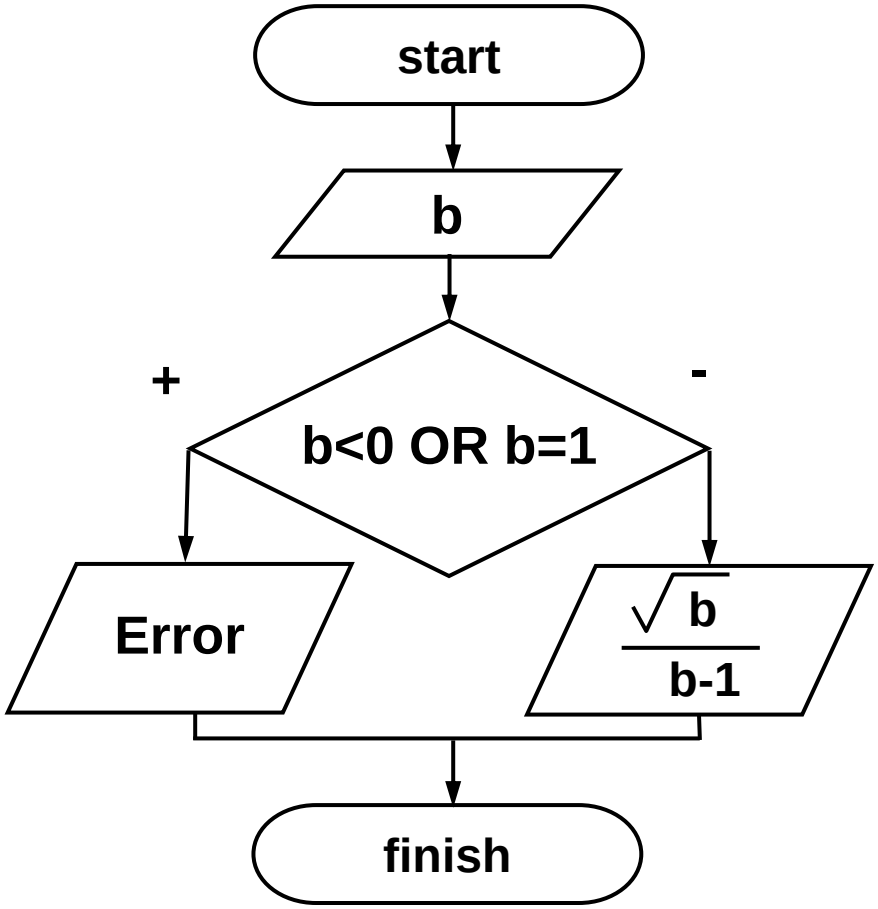



```
Sub Program_1()
Dim x As Double, y As Double
x = InputBox("Input x:")
If (x >= 1) Then
   y = Sqr(Log(x))
   Msgbox "y = " & y
Else
   MsgBox "'x' - not correct"
End If
End Sub
```

3. CONDITIONAL STATEMENTS

3.2. COMPOSITE CONDITION IN IF…THEN…ELSE…

Program for calculate $\frac{\sqrt{b}}{b-1}$, 'b' is typed by user during runtime

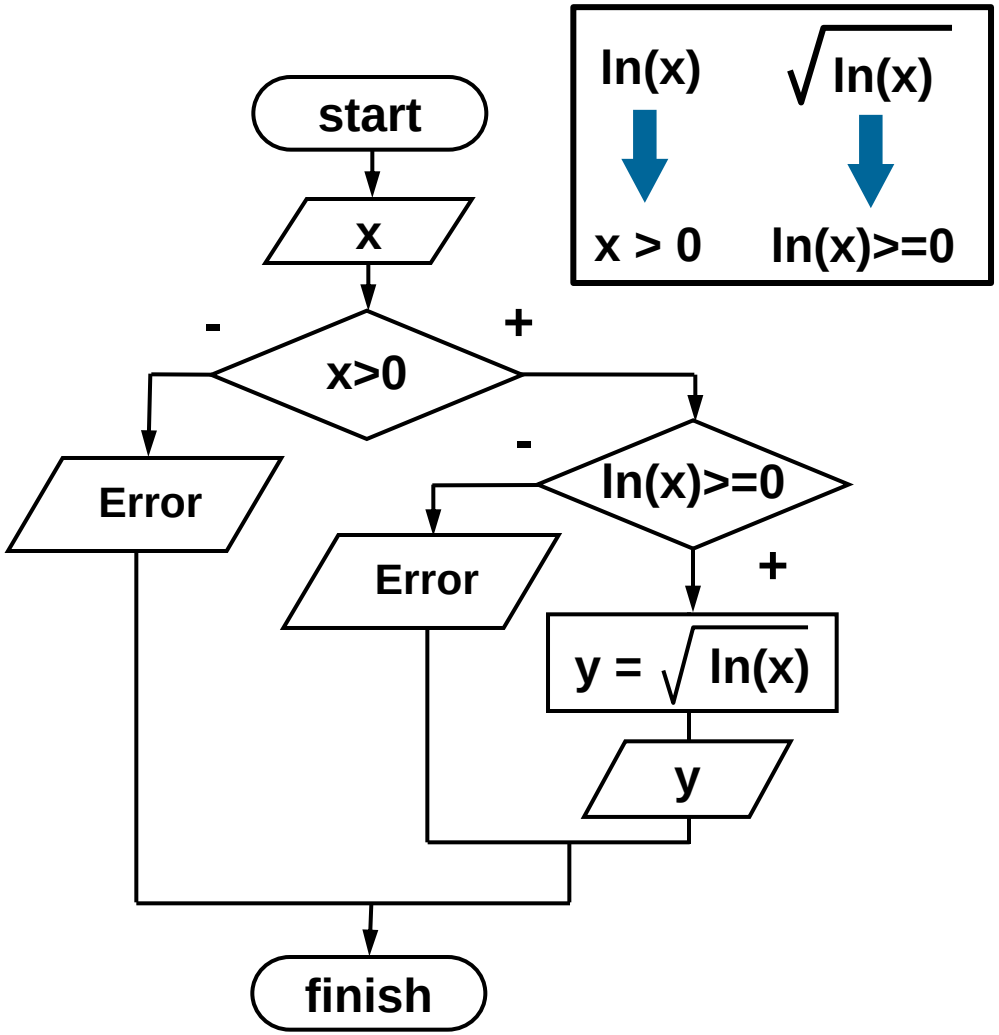



```
Sub Program_2()
Dim b As Double
b = InputBox("Input b:")
If (b < 0) Or (b = 1) Then
   MsgBox "Error"
Else
   MsgBox Sqr(b) / (b - 1)
End If
End Sub
```

3. CONDITIONAL STATEMENTS

3.3. INCLUDING VARIANT OF IF…THEN…ELSE… STATEMENT

Program for calculate $y = \sqrt{\ln(x)}$, 'x' is typed by user during runtime

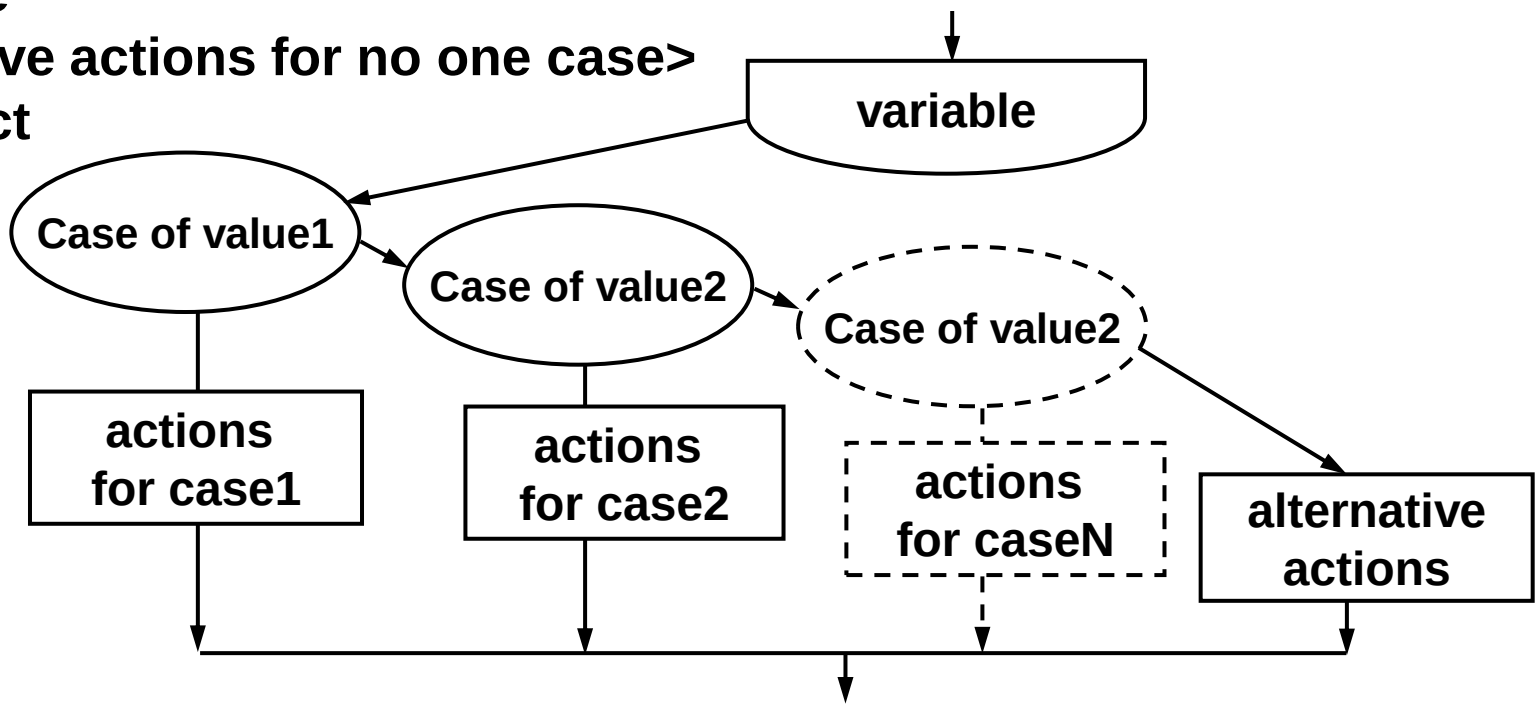



```
Sub Program_3()
Dim x As Double, y As Double
x = InputBox("Input x")
If x>0 Then
    If Log(x)>=0 Then
        y=sqr(log(x))
        MsgBox "y = " & y
    Else
        MsgBox "Error"
    End If
Else
    MsgBox "Error"
End If
End Sub
```

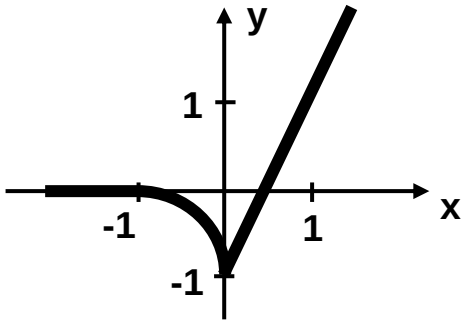
3. CONDITIONAL STATEMENTS

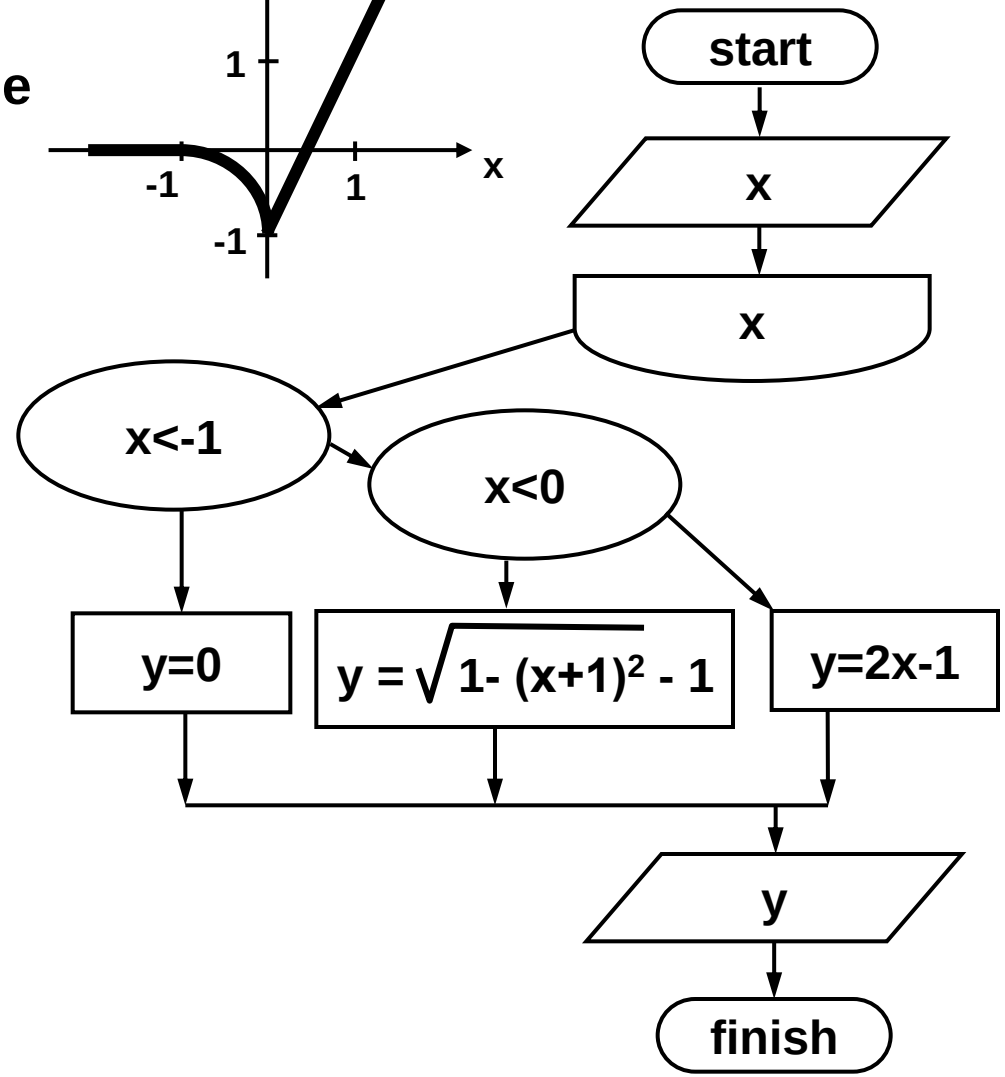
3.4. OPERATOR SELECT…CASE…

```
Select Case <variable>
Case <Case of value1 in variable>
<actions for case1>
Case < Case of value2 in variable >
< actions for case2>
...
Case Else
<alternative actions for no one case>
End Select
```



We have graphic for y = f(x).
Program for calculating y = f(x).
x is typed by user during runtime




```
Sub Program_4()
Dim x As Double, y As Double
x = InputBox("Input x")
Select Case x
Case is <-1
   y=0
Case Is <0
   y=sqr(1- (x+1) ^ 2) - 1
Case Else
   y=2*x-1
End Select
Msgbox "y = " & y
End Sub
```