

Formulating Computations And Using Variables

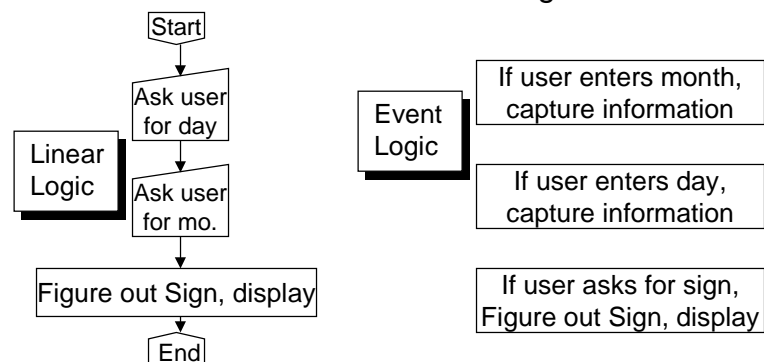
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Variables are essential to expressing algorithms. They have names, they have values and those values have types. Variables have scope, too.

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Thinking Of Solving A Problem

- ❖ State the task to be solved ...
"Two inputs are presented, the month and the day a person was born; the astrological sign of that date is displayed."
- ❖ Consider how the solution could be organized



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An Event Solution

- ❖ Building interactive applications favors the event approach ...
 - ❑ Activating the controls causes the events
 - ❑ The event procedures (Subs) implement the processing
 - ❑ Variables are essential to passing data among events

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Variables

- ❖ Variables name data values in the program
- ❖ Variables have a *type*, which is the kind of number or value that they are expected to name
 - + Integer is the type for "whole numbers", e.g. 4
 - + String is the type for "letter sequences", e.g. "four"
 - + Others will be introduced when needed
- ❖ Variables are *declared*, which means they are listed together with their types at the start of the program or a procedure
- ❖ Variables are *scoped*, which means that if they are declared inside a procedure they cannot be "seen" outside the procedure

CSE 100 Variables ...

Key Words Identifiers Type

Declarations

The variables declared outside the procedures are *global* to them

```

Dim loMo, hiMo As String
Dim brkDt As Integer

Private Sub cmdOK_Click()
    If txtDay < brkDt Then
        lblSign.Caption = loMo
    Else
        lblSign.Caption = hiMo
    End If
    lblSign.Visible = True
End Sub

Private Sub optFeb_Click()
    loMo = "♈ Aquarius"
    hiMo = "♉ Pisces"
    brkDt = 19
End Sub
    
```

CSE 100 Using Variables In VB6

```

Dim loMo, hiMo As String
Dim brkDt As Integer

Private Sub cmdOK_Click()
    If txtDay < brkDt Then
        lblSign.Caption = loMo
    Else
        lblSign.Caption = hiMo
    End If
    lblSign.Visible = True
End Sub

Private Sub optFeb_Click()
    loMo = "♈ Aquarius"
    hiMo = "♉ Pisces"
    brkDt = 19
End Sub
    
```

- ❖ One important use for variables in programming is to “capture values” from one control that will be used in another.
- ❖ For example, a radio button will be associated with specific information like the starting and ending dates of a Zodiac sign.