Thinking Through A Program

For a program to compute the desired result it must proceed through a series of logical steps, transforming the inputs into outputs. Figuring out what those logical steps should be is the task of the programmer.

Project 1 For FIT100

Projects are multipart tasks that span a couple of weeks in which a significant computation is developed.

We will discuss Sign Find today

Enter Your Sign, Please

Enter This Month And Day Of Your Birth:

Month Name: Budding

Day Name: Birth

Month Name: October

Day Name: 22

OK Command Button

We determined the sign to be Cancer.

Sign Finder

Sign Finder accepts the day and month of a person’s birth and returns the person’s Zodiac sign.

In formulating the logic of the computation, specify the inputs and outputs first:

- Input: A month and a day
- Output: The name of the Zodiac sign

The GUI is the source of the input and the display for the output. We’ll design it at this point too.

Sign Finder Desiderata

The radio buttons and the text box of the GUI are the means of presenting input.

The computation takes place when the OK is clicked.

Since clicking a radio button, entering the text box and clicking the OK command button are “events”, the program can be developed by considering what computation is needed in response to each event.

- Month Radio Button — set up the data for that month
- Day Value Entry — save the data for later
- OK Command Button — Determine the sign and print it

How is the sign determined from the month and day?

Consider The Signs

Notice that a person born in a given month could have one of two signs, depending on the day of birth.

- A July birthday could be either Cancer or Leo.
- Every month is similar. There are two signs possible.

Consider The Signs

Aries March 21 April 19
Taurus April 20 May 20
Gemini May 21 June 20
Cancer June 21 July 22
Leo July 23 August 22
Virgo August 23 September 22
Libra September 23 October 22
Scorpio October 23 November 21
Sagittarius November 22 December 21
Capricorn December 22 January 19
Aquarius January 20 February 18
Pisces February 19 March 20

On The Selection Of A Month ...

When a month is chosen, remember the two signs that apply and the day when they change … when the birth day is chosen it is possible to pick the sign.

Cancer June 21 July 22
Leo July 23 August 22

Logic for July

Month = "Cancer"
Month = "Leo"
Midpt = 22
On The Specification Of The Day ...

- The day is simply a number that is typed in
- It should be saved in a variable for later use

The text box is a control that will be named "txtDay". Its content is referred to as its property "Text". To refer to any property write `<control name>.<property>

Logic for Textbox

dayPick = txtDay.Text

On Clicking On OK

- With the month chosen and the day chosen, it is possible to figure out the sign
- If the day is on the midpt or before, it's the earlier sign
- If the day is after the midpt, it's the later sign

Logic for OK Button

If dayPick <= midpt Then
  lblSign.Caption = loSign
Else
  lblSign.Caption = hiSign
End If

If lblSign.Visible = True Then
  lblYour.Visible = True
End If

Having Brained Out The Logic ...

- The following steps achieve the result
- Create the GUI
- Declare the four variables
  - loSign, a string
  - hiSign, a string
  - midpt, an integer
  - dayPick, an integer
- Set loSign, hiSign and midpt in radio buttons
- Set dayPick to the text input
- For the OK click event, incorporate the If-statement and set the visibility of the two labels