

## Input Routines with Data Validation

```
//*****  
// SimpleInputRoutinesV3  
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// CIS 129 - Programming and Problem Solving I  
//*****  
// This program uses generalized functions to get input data  
//*****
```

### Start

```
Call displayWelcomeMessage()  
  
Declare String userName  
userName = getString("Please enter your name.")  
Display "Your name is", userName  
  
Declare Integer userAge  
userAge = getInteger("Please enter your age.")  
Display userName, ", your age is", userAge  
  
Call displayGoodbyeMessage()
```

### End

```
// Display a welcome message to the user
```

### Module **displayWelcomeMessage()**

```
Display "Welcome to the Input Routine Template Program!"  
Display "This program demonstrates how to use functions to get ",  
        "input from a user."
```

```
End Module
```

```
// Display a message to the user and get input from keyboard
```

```
Function String getString (String msg)
```

```
    Declare String newValue
```

```
    Display msg
```

```
    Input newValue
```

```
    While newValue is null or spaces
```

```
        Display "Error: Missing input."
```

```
        Display msg
```

```
        Input newValue
```

```
    End While
```

```
    Return newValue
```

```
End Function
```

```
// Display a message to the user and get input from keyboard
```

```
Function Integer getInteger (String msg)
```

```
    Declare Integer newValue
```

```
    Display msg
```

```
    Input newValue
```

```
    While newValue is not an Integer
```

```
        Display "Invalid number."
```

```
        Display msg
```

```
        Input newValue
```

```
    End While
```

```
    Return newValue
```

```
End Function
```

```
// Display a message to the user and get input from keyboard
```

```
Function Real getReal (String msg)
```

```
    Declare Real newValue
```

```
    Display msg
```

```
    Input newValue
```

```
    While newValue is not a number
```

```
        Display "Invalid number."
```

```
        Display msg
```

```
        Input newvalue
```

```
    End While
```

```
    Return newValue
```

```
End Function
```

```
// Display a message to the user and get input from keyboard
```

```
Function Boolean getYorN (String msg)
```

```
    Declare Boolean newValue
```

```
    Display msg
```

```
    newValue = getString(msg)
```

```
    While uppercase(newValue) not = Y AND uppercase(newValue) not = N
```

```
        Display "Invalid value should be Y or N"
```

```
        newValue = getString(msg)
```

```
    End While
```

```
    If newValue = Y Then
```

```
        Return true
```

```
    End If
```

```
    Return false
```

```
End Function
```