

Error Checking

Even the most experienced programmers make mistakes. One asset to programming is being able to debug a program that contains errors. There are three types of errors: Syntax (Compiler) Errors, Logic Errors and Runtime Errors.

Syntax (Compiler) Errors:

- These are errors that prevent your program from running. When the compiler tries to decode your program into binary (language the computer understands) it fails because it misunderstands something
- These errors are often found to be typos or when variables have been used without being declared at the beginning of the program

Runtime Errors

- These are errors that occur while your program is running. These tend to happen when your program attempts an operation that is impossible to complete.
- This tends to be operations that create errors such as a division by 0 or when the user enters in a selection that the computer does not understand.

Logic Errors

- These errors are when your program works but does not do what you expected it to. These sometimes can be the hardest errors to catch and require a lot of program testing.

Python Programming - Find the errors

```
import os
userEntry = -1

while userEntry <> 0:
    os.system('clear')
    print(---Welcome---!)
    print("1. Say Hello")
    print("2. Say Kon'nichiwa")
    print("3. Say Bonjour")
    print("0. Quit")
    print("===> " end="")
    userEntry = int(get())
    if userEntry==1:
        print("\n\nHELLO!!!\n\n")
    elif userEntry==2:
        print("\n\nKON'NICHIIWA!!!\n\n")
    elseif userEntry==3
        print("\n\nBONJOUR!!!\n\n")
    elif userEntry==0:
        print("\n\nHave a great day, thanks for playing.\n\n")
    else
        print("/n/nSorry, invalid answer. Please try again.\n\n")

write('Press enter to continue...')
input()

print("Bye!")
```

Small Basic - Find the Errors

```
CurrentYear = 2019  
decade = 0
```

```
TextWindow.Write("what is your first name? ")  
FirstName = Read()  
TextWindow.Write("what is your last name? ")  
LastName = TextWindow.Read()
```

```
TextWindow.Write("What year were you born? ")  
BirthYear = TextWindow.Read()  
TextWindow.Write("What month were you born? ")  
Month = TextWindow.Read()  
TextWindow.Write("What day were you born? ")  
Month = TextWindow.Read()
```

```
age = BirthYear - CurrentYear
```

```
numDecades = Math.Round(age/10)
```

```
extraYears = Math.Remainder(age,decade)
```

```
TextWindow.Hide()
```

```
'-----  
GraphicsWindow.Width = 400  
GraphicsWindow.Height = 400  
GraphicsWindow.Show()
```

```
maxNumber = -400
```

```
For counter = 1 To 2000  
  x[counter] = Math.GetRandomNumber(maxNumber)  
  y[counter] = Math.GetRandomNumber(maxNumber)  
EndFor
```

```
For counter = 1 To 2000  
  GraphicsWindow.BrushColor = GraphicsWindow.GetRandomColor()  
  GraphicsWindow.DrawRectangle(x,y,20,-20)  
  GraphicsWindow.FillRectangle(x,y,20,20)  
EndFor
```

```
'Draw text box
```

```
GraphicsWindow.BrushColor = Black  
GraphicsWindow.PenColor = "Blue"  
GraphicsWindow.PenWidth = 20  
GraphicsWindow.DrawRectangle(100,100,200,200)  
GraphicsWindow.FillRectangle(100,100,200,200)
```

```
'Output text
```

```
GraphicsWindow.BrushColor = "Blue"  
GraphicsWindow.FontSize = 16  
GraphicsWindow.DrawBoundText(120,125,200,FirstName, " ", LastName)  
GraphicsWindow.DrawBoundText(120,165,200,"Born: "+day+"/"+month+"/"+birthyear )  
GraphicsWindow.DrawBoundText(120,215,200,"Age: " + Age)  
GraphicsWindow.DrawBoundText(120,265,200,numDecades +" decades, " + extraYears +" years")
```