

An Introduction To Interactive Programing In Python (Part 1)

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Quiz 2b – Buttons and input fields

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Question 1

In the following code, what does the number represent?

```
my_button = frame.add_button("My Label", button_handler, 100)
```

Use the CodeSkulptor [documentation](#) to look it up.

Your Answer

Score

Explanation

Width of the button in pixels

Correct

10.00

Height of the button in pixels

Vertical position of the button in pixels

Horizontal position of the button in pixels

Total

10.00 / 10.00

Question 2

How many control objects are allowed in a frame?

Your Answer

Score

Explanation

1

Unlimited, i.e., 0 or more

Correct

10.00

Correct.

0

Total

10.00 / 10.00

Question 3

In SimpleGUI, one kind of object can be added to the control panel that doesn't allow any handler. Thus, this object can't respond to anything. What kind of object is that?

Look at the [documentation](#) for SimpleGUI control objects.

Your Answer		Score	Explanation
Label	Correct	10.00	
Button			
Input field			
Canvas			
Title			
Frame			
Total		10.00 / 10.00	

Question 4

When you enter text into an input field and press enter, the text is passed to the input field's event handler. What is the data type of the text?

Your Answer	Score	Explanation
A string or a number, depending on the text entered		
A string	Correct 10.00	The entered data is a string. The text entered into an input field is always passed to the input handler as a string even if the text corresponds to a number.
A number		
Total	10.00 / 10.00	

Question 5

Consider the following conditional statement.

```
if p == False:
    return False
elif q == False:
    return False
```

```
else:
```

```
    return True
```

That is equivalent to which of the following simpler statements?

Try to reason logically about each of the statements, but also try each in [CodeSkulptor](#).

Your Answer		Score	Explanation
<code>return p or q</code>	Correct	1.00	
<code>return (not p) or (not q)</code>	Correct	1.00	
<code>return p and q</code>	Correct	7.00	
<code>return not(p or q)</code>	Correct	1.00	
Total		10.00 / 10.00	

Question 6

Which of the following describes the mistake in the following code?

```
def volume_cube(side):
    """ Returns the volume of a cube, given the length of its side. """
    print side ** 3

s = 5

print "The volume of a cube with sides", s, "long is", volume_cube(s), "."
```

Your Answer

Score

Explanation

The function should return, not print, its result.

Correct 10.00

Correct. In most cases, functions should return their computed results. Furthermore, the documentation str here specifies that it should be returning that value.

The call to `volume_cube` shouldn't be within a `print` statement. More generally, function calls usually shouldn't be within `print` statements.

All of the printing should be done within the function.

Total

10.00 /
10.00

Question 7

What kind of errors can happen if you are missing a needed `global` declaration in one of your function definitions? For this question, you need only consider the case where the problem is in the function that is missing the `global` declaration.

If you are having trouble with this question, watch this week's Programming Tips video again.

Your Answer	Score	Explanation
Error: local variable '...' referenced before assignment	Correct 4.00	
SyntaxError	Correct 0.67	
NameError	Correct 0.67	
AttributeError	Correct 0.67	
An incorrect computation that generates no error message	Correct 4.00	If you only assign to the variable, without trying to use its current value, you won't get any error message. Instead, Python assumes the variable is local, which might lead to an unexpected result.

Total	10.00 / 10.00
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Question 8

Which of the following function definitions are in the [recommended code style](#)?

Your Answer	Score	Explanation
<pre>def f(x,y): """ Add the two inputs. """ return x + y</pre>	Correct 1.00	This does not follow recommended style, there should be a space after the comma.
<pre>def myFunction(x, y): """ Add the two inputs. """ return x + y</pre>	Correct 1.00	This does not follow recommended style, only class names should use “camel case”.
<pre>def f(x, y): return x + y # Add the two inputs. ts.</pre>	Correct 1.00	This does not follow recommended style, a comment should be on a separate line.

```
def my_function(x, y):  
    """ Add the two inputs. """  
    return x + y
```

Correct 7.00

Total	10.00 /
	10.00

Question 9

Cut and paste the following code into [CodeSkulptor](#). Run it and make an attempt to understand how it works.

```
# Simple interactive application
```

```
import simplegui
```

```
# Define globals.
```

```
message = "Welcome!"
```

```
count = 0
```

```
# Define event handlers.
```

```
def button_handler():
    """Count number of button presses."""
    global count
    count += 1
    print message, " You have clicked", count, "times."

def input_handler(text):
    """Get text to be displayed."""
    global message
    message = text

# Create frame and register event handlers.

frame = simplegui.create_frame("Home", 100, 200)
frame.add_button("Click me", button_handler)
frame.add_input("New message:", input_handler, 100)

# Start frame.
```

```
frame.start()
```

We'd like to modify the code so that the count is reset to zero whenever a new message is entered. Where would you need to modify this code to implement this change?

Your Answer

Score

Explanati

Add an assignment to `count` in the initialization of global variables.

Add an assignment to `count` in the event handler for the button.

Add an assignment to `count` in the event handler for the input field. Also add a `global count` declaration there.

Correct 10.00

Add an assignment to `count` at the end of this code.

Total

10.00 /
10.00

Question 10

In the game “Guess the number”, what is the minimum number of guesses necessary to guarantee that the guesser can **always** win if the secret number is chosen in `range(0, 400)`?

Review the mini-project description for "Guess the number" if you are having trouble with this problem.

Your Answer	Score	Explanati
9 guesses	Correct 10.00	
8 guesses		
10 guesses		
It's impossible to guarantee that you can always win at "Guess the number".		
12 guesses		
Total	10.00 / 10.00	