Quiz 2 Review Session (Copy)

Boolean Operators

Comparison Operators

```
a = 50
b = 10
c = 25
```

Example 1

What is the **value** stored in result?

What is the **type** of the value stored in result?

```
result = a <= b
```

Example 2

What is the **value** stored in result?

What is the **type** of the value stored in result?

```
result = a // 2 == c
```

Example 3

What is the **value** stored in result?

What is the **type** of the value stored in result?

```
result = a != b + c
```

Logical Operators

```
a = [1, "hello", (2, 3)]
b = [None, True, "e"]
```

Example 1

What is the **value** stored in result?

```
result = not a[0] == b[2]
```

Example 2

What is the **value** stored in result?

```
result = b[1] or a[1] == b[0]
```

Example 3

What is the **value** stored in result?

```
result = a[0] == a[2][1] - a[2][0] and b[2] in a[1]
```

Example 4

What is the **value** stored in result?

```
result = not True and True or True
```

Conditional Statements

`if`, `elif`, and `else`

Example 1

```
a = 5
if a > 6:
  print("Dog")
elif a < 3:
  print("Lizard")
else:
  print("Panda")
```

Example 2

```
a = 5
if a > 4:
  print("Dog")
elif a > 3:
```

```
  print("Lizard")
else:
  print("Panda")
```

Example 3

```
a = 5
if a > 4:
  print("Dog")
if a > 3:
  print("Lizard")
else:
  print("Panda")
```

Loops

`while`

Example 1

What does this program print to the screen?

```
num = 0
result = []
while num < 30:
  num += 1
  if num % 2 == 1:
    continue
  elif num == 16:
    break
  result.append(num)
print(result)
```

`range`

```
for i in range(10):
  print(i)
```

```
for i in range(5, 10):
  print(i)
```

```
for i in range(2, 10, 2):
  print(i)
```

`for`

Exercise 1

What happens when the following code executes?

```
my_list = [
  "Dog", "Lizard", "Panda", "Cat",
  "Orca", "Snake", "Beaver", "Turtle"
]
numbers = [2, 4, 7]
for num in numbers:
  print(my_list[num])
```

Exercise 2

What happens when the following code executes?

```
my_list = [
  "Dog", "Lizard", "Panda", "Cat",
  "Orca", "Snake", "Beaver", "Turtle"
]
for num in range(0, 8, 2):
  i = num % 3
  print(my_list[i])
```

Complex `if` Chains

Exercise 1

```
result = []
a = True
b = False
c = True

if a:
  result.append("one")
elif c:
  result.append("two")
else:
  result.append("three")

if a and b:
  result.append("four")
elif a or b:
  result.append("five")
else:
  result.append("six")

if not a:
  result.append("seven")
elif not c:
  result.append("eight")
elif not b:
  result.append("nine")
else:
  result.append("ten")
```

Writing Functions

1️⃣ Write a function `is_receiving_bachelors_degree` that accepts *one* argument: a student *list* that describes different aspects of a Computer Science student (their name, state, degree, and year of completion). Here is an example of a student list:

```
['Peter Parker', 'CA', 'BAMS', 2023]
```

Your function will return a *boolean* value which will be `True` if the student is graduating with a bachelor's degree in 2022 and `False` if they are not. The possible degrees that CS students are pursuing are BA, BS, BAMS, and BSMS. Students that are also pursuing a master's degree will receive their bachelor's degree the year before they complete their full degree. For example if your function was called

```
is_receiving_bachelors_degree(["Peter Parker", "CA", "BAMS", 2023])
```

the expected output would be `True` because Peter is receiving his master's degree in 2023 and therefore his bachelor's degree in 2022.