COMP110 QZ01 - Version A

Sara Huston

TOTAL POINTS

31 / 31

QUESTION 1

Conditionals 4 pts

1.1 **1 / 1**

✓ **+ 1 pts** *Correct: Any number not divisible by 3*

+ 0 pts Incorrect

1.2 **1 / 1**

✓ **+ 1 pts** *Correct: Any number divisible by 3 and > 4*

+ 0 pts Incorrect

1.3 **1 / 1**

✓ **+ 1 pts** *Correct: Any number divisible by 3 and <= 4*

+ 0 pts Incorrect

1.4 **1 / 1**

✓ **+ 1 pts** *Correct: Any number <= 17*

+ 0 pts Incorrect

QUESTION 2

True or False 4 pts

2.1 **1 / 1**

✓ **+ 1 pts** *False*

+ 0 pts True

2.2 **1 / 1**

✓ **+ 1 pts** *True*

+ 0 pts False

2.3 **1 / 1**

✓ **+ 1 pts** *True*

+ 0 pts False

+ 0 pts Blank

2.4 **1 / 1**

✓ **+ 1 pts** *True*

+ 0 pts False

QUESTION 3

Evaluating Expressions 4 pts

3.1 **1 / 1**

✓ **+ 1 pts** *Correct: float*

+ 0 pts Incorrect

3.2 **1 / 1**

✓ **+ 1 pts** *Correct: 6*

+ 0 pts Incorrect

3.3 **1 / 1**

✓ **+ 1 pts** *Correct: 130*

+ 0 pts Incorrect

3.4 **1 / 1**

✓ **+ 1 pts** *Correct: `str(10) + str(10)`*

+ 0 pts Incorrect

QUESTION 4

Boolean Expressions 4 pts

4.1 **1 / 1**

✓ **+ 1 pts** *False*

+ 0 pts True

+ 0 pts No answer

4.2 **1 / 1**

✓ **+ 1 pts** *True*

+ 0 pts False

+ 0 pts No answer

4.3 **1 / 1**

✓ **+ 1 pts** *True*

+ 0 pts False

+ 0 pts No answer

4.4 **1 / 1**

✓ **+ 1 pts** *False*

+ 0 pts True

QUESTION 5

Memory Diagram - Functions 9 pts

5.1 Output **1 / 1**

✓ **+ 1 pts** *Correct: `"ii"` or `ii`*

+ 0 pts Incorrect

- 0.5 pts Extra Output

5.2 Diagram **8 / 8**

Globals

✓ **+ 1 pts** *`main` defined as function on the heap*

✓ **+ 1 pts** *`h` defined as function on the heap*

main() frame

✓ **+ 1 pts** *`RA` is 13*

h() frame

✓ **+ 1 pts** *`RA` is 11*

✓ **+ 1 pts** *`RV` is `"Louie"`*

✓ **+ 0.5 pts** *`i` initialized with value `8`*

✓ **+ 0.5 pts** *`i` final value of `5`*

✓ **+ 1 pts** *`j` is `"Louie"`*

✓ **+ 0.5 pts** *`output` initialized with value `""`*

✓ **+ 0.5 pts** *`output` final value of `"ii"`*

- 1 pts Forgot quotes in `"Louie"`

- 0.25 pts Forgot quotes in `"ii"`

- 1 pts 2 h frames

+ 0 pts Incorrect/Blank

QUESTION 6

Memory Diagram - Conditionals 6 pts

6.1 Output **1 / 1**

✓ **+ 1 pts** *Correct: `"blue"` or `blue`*

+ 0 pts Incorrect

- 0.5 pts Extra Output

6.2 Diagram **5 / 5**

✓ **+ 1 pts** *`a` initialized as `"a"` (WITH QUOTES)*

✓ **+ 1 pts** *`a` final value is `"b"` (WITH QUOTES)*

✓ **+ 1 pts** *`b` initialized as `"b"` (WITH QUOTES)*

✓ **+ 1 pts** *`b` final value is `"a"` (WITH QUOTES)*

✓ **+ 1 pts** *`c` is `"a"` (WITH QUOTES)*

+ 2.5 pts (Partial credit: COMPLETELY correct memory diagram, BUT they forgot the quotes)

+ 0 pts Incorrect or blank

Quiz 01 - A

COMP 110: Introduction to Programming and Data Science Fall 2023

October 3, 2023

Name: Sara Muston

9-digit PID: 730459812

Do not begin until given permission.

Honor Code: I have neither given nor received any unauthorized aid on this quiz.

Signed: 

Question 1: User Input For the following subquestions, answer with a valid input value for n that would cause the given letter to print. **It is OK for your input to cause other letters to print as well!** If there is no such value, write "Unreachable".

```
1  n: int = int(input("Enter a number: "))
2
3  if n % 3 != 0:
4    print("A")
5  else:
6    if n > 4:
7      print("C")
8    else:
9      print("B")
10
11 if n + 1 <= 18:
12   print("D")
```

1.1. "A"

4 (any # not divisible by 3)

1.2. "C"

6 (any # divisible by 3 & >4)

1.3. "B"

3 (any # divisible by 3 & ≤3)

1.4. "D"

1 (any # ≤ 17)

Question 2: True or False The following statements are about while loops and functions.

2.1. Functions must be defined and called inside the same .py file.

○ True
● False

2.2. The last index of a string is one less than the length of the string.

● True
○ False

2.3. When a *function call* is encountered, the return address "RA" is established in its frame before jumping to the first statement of the function's body.

● True
○ False

2.4. The first index of a string is 0.

● True
○ False

ind = len-1

Question 3: Multiple Choice 3.1. What *type* does the following expression evaluate to?

```
1 int(3.0) + 5 // int("3")
```

- (●) float
- ( ) str
- ( ) int
- ( ) decimal
- ( ) TypeError

3.2. Evaluate the expression below.

```
1 "23456"[len("23456") - 1]
```

- ( ) 5
- (●) 6
- ( ) 2
- ( ) 4
- ( ) 3

3.3. Evaluate the expression below.

```
1 int("6" + "5") + 65
```

- (●) 130
- ( ) "6565"
- ( ) "130"
- ( ) 76

3.4. Which expression evaluates to a str data type?

- ( ) int("10")
- ( ) len("winter")
- ( ) "y" > "p"
- (●) str(10) + str(10)

Question 4: Multiple Choice 4.1. Evaluate the expression below.

```
1 not (True and False) and (not
    True)
```

- ( ) True
- (●) False

4.2. Evaluate the expression below.

```
1 (True or True) or (False and
    False)
```

- (●) True
- ( ) False

4.3. Evaluate the expression below.

```
1 (True) == (len("hello") >= 5)
```

- (●) True
- ( ) False

4.4. Evaluate the expression below.

```
1 ((not True) or True) and False
```

- ( ) True
- (●) False

Question 5: Trace a memory diagram of the following code listing.

```
1  def h(i: int, j: str) -> str:
2      output: str = ""
3      while i > len(j):
4          if i % 2 == 0:
5              output += "i"
6          i = i - 1
7      print(output)
8      return(j)
9
10 def main():
11     h(8,"Louie")
12
13 main()
```

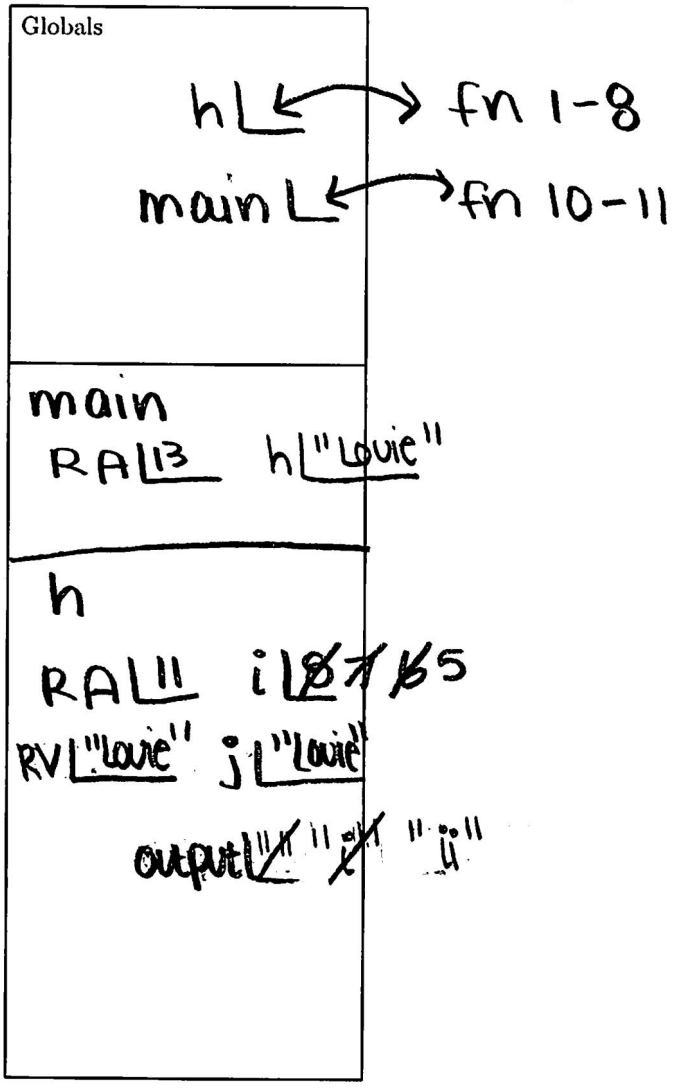
8>5
i
7>5
6>5
i
5⊁5

Output

"ii"

Stack

Heap



Question 6: Trace a memory diagram of the following code listing.

```
1  a: str = "a"
2  b: str = "b"
3  c: str = a
4
5  a = b
6  b = c
7
8  if c == a:
9    print("red")
10 else:
11   print("blue")
```

Output

"blue"

Stack

Globals

a "a" "b"

b "b" "a"

c "a"

Heap

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