CSCI 150: Exam 1 – In Class

Monday, February 13, 2023

You have 50 minutes to complete this exam. **You are not allowed to use your notes, textbook, phone or computer. Partial credit for incorrect answers can be given only if you show your work.**

Print your name : _____

1. You are given the following Python definitions:

```
a = 6
b = 4
c = 21
d = 7
```

Evaluate the truth value of each Python expression below. Showing some of your work/thinking can be helpful in assessing partial credit on incorrect final answers.

- `False or ((True or False) and False)`

- `a ** 2 < c`

- `c // a == d - b`

- `("tricky" > "try") and ("aa" <= "aaa")`

2. Trace the execution of the following Python program in the provided template.

   Showing scratch work is not required, but makes it much easier to determine if you understand how tracing works if you make a mistake.

```
aa  = 5
bb  = 2
cc  = aa * bb + 1

if cc > 11:
    aa = 2
elif cc == 11:
    bb = 7
    cc = cc - 4
elif cc == 7:
    bb = 13
else:
    cc = 123
```

Scratch	**Variables**

3. Trace the execution of the following Python program in the provided template.

```
t  = 8
s  = 5
m  = "hello"
g  = "HELLO"
x  = "Hi"

if m == g:
    if t > s:
        t = t + s
    elif t == t + s:
        x = "bye"
else:
    if t >= s:
        s = s + t
    elif s == s + t:
        x = "seeya"

g = "Ciao"
```

Scratch	**Variables**

4. Write a function `larger` which takes in two integer parameters, `a` and `b`, and returns a boolean – it will return `True` whenever `a` is larger than `b` and `False` otherwise. Note, if it happens that `a == b`, then the function should return `False`. We have written the definition statement for you.

```
def larger(a: int, b: int) -> bool:
```

5. Write a function `not_hailstone` which takes in a single integer parameter `n`. If `n` is even, it should return `n + 3`. Otherwise, it should return `(n - 1) // 2`.

```
def not_hailstone(n: int) -> int:
```