ECS 32A: Practice Problems #1 Solutions

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Contents

1 Changelog

You should always refer to the latest version of the syllabus.

- v.1: Initial version.

2 Problems

2.1 Problem #1

```
>>> "Aba" < "aaaa" < "abc" < "acaA" < "zzz"
True
```

2.2 Problem #2

```
>>> "mAd" < "ma" < "maD" < "mad" < "mmd"
True
```

2.3 Problem #3

2.3.1 Snippet #1

Yes, short-circuit evaluation can prevent the program from crashing, because if `x` is 0, then `x < 10` will be true, so `5 % x` won't be calculated and a crash will be avoided.

2.3.2 Snippet #2

No, short-circuit evaluation cannot prevent the program from crashing, because when the condition is checked, the variable `user_input` will always be undefined the first time around. The order of the conditions in the `while` loop setup needs to be reversed.

2.4 Problem #4

Here are three different solutions. `for` loops are not on the exam, but I included a `for` loop solution for the curious.

```
# while Loop (perhaps easier solution):
boundary = int(input("Enter: "))
i = boundary
while i >= 3:
    print(i)
    i -= 1

# while Loop (harder solution?):
boundary = int(input("Enter: "))
while boundary >= 3:
    print(boundary)
    boundary -= 1
```

2.5 Problem #5

Remove lines C, D, E, H, I, M, and N.

```
n = int(input("Enter: "))
i = 0
while i < n:
    if i < 5:
        print(i)
    else:
        print(3 * i)
    i += 1
```

2.6 Problem #6

Below is one solution. Some students don't like to initialize 'area' before the loop in the way that I did. If they don't do that, then they will have to have two 'break' statements within the loop and 'while True' as the condition, which is OK as well.

```
PI = 3  # students don't need to do this
area = 0
while area <= 100:
    radius = input("Enter: ")
    if radius == "end":
        break
    radius = float(radius)
    area = PI * radius ** 2
```

2.7 Problem #7

```
a = int(input("Enter first integer: "))
b = int(input("Enter second integer: "))
if a > b:
    print("The sum is", a + b)
else:
    print("The difference is", a - b)
```

2.8 Problem #8

```
val = int(input("Enter integer: "))
res = (val + 2) * 3
print("Result: {}".format(res))
```

2.9 Problem #9

```
s1 = input("Enter first string: ")
s2 = input("Enter second string: ")
if s1 == "Hello" and s2 == "World":
    print("You said \"Hello, World\".")
```

2.10 Problem #10

```
a = int(input("Enter first integer: "))
b = int(input("Enter second integer: "))
x = b - 1
while x > a:
    print(x)
    x -= 1
```