

Advanced Programming Course

Homework: 3

Short answer questions:

1- Consider the following Python code fragment:

```
# i, j, and k are numbers
if i < j:
    if j < k:
        i = j
    else:
        j = k
else:
    if j > k:
        j = i
    else:
        i = k
print("i =", i, " j =", j, " k =", k)
```

What will the code print if the variables i, j, and k have the following values?

- a) i is 3, j is 5, and k is 7
- b) i is 3, j is 7, and k is 5
- c) i is 5, j is 3, and k is 7
- d) i is 5, j is 7, and k is 3
- e) i is 7, j is 3, and k is 5
- f) i is 7, j is 5, and k is 3

2- Consider the following Python program that prints one line of text:

```
val = int(input())
if val < 10:
    if val != 5:
        print("wow ", end='')
    else:
        val += 1
else:
    if val == 17:
        val += 10
    else:
        print("whoa ", end='')
print(val)
```

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What will the program print if the user provides the following input?

(a) 3 (b) 21 (c) 5 (d) 17 (e) -5

Programming questions

1- Write a Python program that gets the income of user as the input and prints their net income after tax deduction. Following is tax rules:

- Income less 1000 tax rate is 0%.
- Income more than 1000 and less than or equal 2500 tax rate is 10%.
- Income more than 2500 and less than or equal 4000 tax rate is 15%.
- Income more than 4000 and less than equal 6000 tax rate is 20%.
- Income higher than 8000 tax rate is 30%.

2- Write a Python program that gets the sides of a triangle and if this triangle is a **right triangle**, the program should print **Right**, otherwise it should print **Not Right**.

3- Write a Python program that requests five integer values from the user. It then prints one of two things: if any of the values entered are duplicates, it prints **DUPLICATES**; otherwise, it prints **ALL UNIQUE**.