

PROGRAMMING FOR ALL - SPRING 2021 - WEEK #3 - LAB - 210414**GENERAL LAB RULES:**

1. Every student has to join lab sessions.
2. A goal of lab assignments is to practice topics covered in class during each week. Each lab has two parts: Theory & Programming.
3. In the theory part, you are expected to read pieces of codes and to predict outputs of these codes. You should not use Python for these predictions; you should test your skills to understand codes. When everyone is ready, TA displays correct outputs.
4. In the programming part, you are expected to make programs for assigned problems. You are expected to make all programs during the lab time, however, only one specified program should be submitted to CANVAS.
5. TA has to check your lab work for the full lab credit.

THIS WEEK TOPICS:

MENU DRIVEN PROGRAMS, FLAG VARIABLES, STRINGS start

PART I: THEORY – for this part take a piece of paper or open an empty file and write down expected outputs without using Python. AFTER this prediction verify your answer using Python or wait for TA to display the answer

1

```
mine=12
yours=21

print(mine>=yours)

print(mine==yours or yours>mine)

print(mine<=yours and yours>2*mine)|

print(mine>yours/2 and mine==3*5 or yours>mine)

print(mine>yours/2 and (mine==3*5 or yours>mine))

print(not(mine==yours) and not(yours<mine))
```

#2

```
value_1=10
value_2=12
flag=False

if value_1*4-value_2*3<=0:
    flag=True

if flag:
    print('FLAG')
else:
    print('NO FLAG')
```

#3

```
apples=12
oranges=15
bananas=10
a_lot=False

if apples+oranges+bananas>=40:
    a_lot=True

if apples>bananas and apples>oranges:
    most='APPLES'
elif oranges>apples and oranges>bananas:
    most='ORANGES'
else:
    most='BANANAS'

if a_lot:
    print('There is a lot of fruit, mostly',most)
else:
    print('There is some fruit.')
```

#4

```
string='ALPHABET'

print(string[3],end='')
print(string[5],end='')
print(string[-4])
|
if string[1]==string[5]:
    print('YES')
else:
    print('NO')

if string[-4]==string[-8]:
    print('YES')
else:
    print('NO')
```

#5

```
word_a='PETER'  
word_b='THOMAS'  
  
if len(word_a)!=len(word_b):  
    word_c='JANE'  
else:  
    word_c='EMILY'  
print(word_c)
```

PART II. PROGRAMMING**Note:****In all programs you can use only methods and tools already introduced in the class.****PROGRAM #1: Temperature with a menu**

Refresh: The formula converting Celsius temperatures to Fahrenheit temperatures is as follows:

$$F = \frac{9}{5} * C + 32$$

Write a program that offers in a menu to convert a temperature from C to F and backward. A user first enters his/her choice about the conversion and then enters a temperature to convert.

Then the program displays the converted value of the temperature.

Possible outputs of the program:

```

This program converts temperature values.

If you want to covert a temperature from Celsius to Fahrenheit enter F.
If you want to covert a temperature from Fahrenheit to Celsius enter C.

Enter your choice: F

Enter a temperature in Celsius: 45
45.0 C = 113.00 F
>>>
RESTART: C:/Users/horaki/Desktop/TCSS141_WINTER2021/WEEK #3/3_LAB/TCSS141
lab3_programs.py

This program converts temperature values.

If you want to covert a temperature from Celsius to Fahrenheit enter F.
If you want to covert a temperature from Fahrenheit to Celsius enter C.

Enter your choice: C

Enter a temperature in Fahrenheit: 98.6
98.6 F = 37.00 C
>>>
RESTART: C:/Users/horaki/Desktop/TCSS141_WINTER2021/WEEK #3/3_LAB/TCSS141
lab3_programs.py

This program converts temperature values.

If you want to covert a temperature from Celsius to Fahrenheit enter F.
If you want to covert a temperature from Fahrenheit to Celsius enter C.

Enter your choice: t

Sorry, there is no such choice in the menu.
>>> |

```

PROGRAM #2: FLAG variables

Write a program that is using a flag variable `alert` to display whether an entered number is in a "right range" or no. In the "right range" are all values from 90 to 120, including these values.

The program asks a user to enter a number. Then the program displays:

- "The value is OK", if the entered value is in the "right range" or
- "The value is risky.", if the entered value is not in the "right range".

Note: the flag variable `alert` should be `True` if the entered value is out of the "right range".

PROGRAM #3: SSN form - must be submitted to CANVAS as lab3.py.

Start the program with: `# your name.`

Write a program that receives from a user a nine digit number which represents a SSN and displays this number in the form xxx-xx-xxxx.

Example: if the entered number was 124578123, the displayed number is 124-57-8123.