Exercises Week 1-1

EX.1-1 Console menu

Open VSC then -> File -> Open folder -> select “Python course” folder.

Create a new file “ex1-1.py”

TASK: Display a server menu (see image below). Print Welcome message and menu options into console. Ask user to input the number then display this number.

```
***** Welcome to ConsoleServe - Your Virtual Console Server Support! *****
For Technical Support, press '1'
For Account Assistance, press '2'
For Console Access, press '3'
For Network Configuration, press '4'
For System Updates, press '5'
For Billing and Payments, press '6'
For General Inquiries, press '7'
For Speaking to a Live Agent, press '0'
Enter your choice: 2
Your choice is 2
```

(*) Use **print()** and **input()** commands.

(**) Coloured text codes: https://pkg.go.dev/github.com/whitedevops/colors

(***) Menu items (You can create your own ones):

Welcome to ConsoleServe - Your Virtual Console Server Support!

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For Network Configuration, press '4'

For System Updates, press '5'

For Billing and Payments, press '6'

For General Inquiries, press '7'

For Speaking to a Live Agent, press '0'

EX.1-2 ASCII cat

Create a new file “ex1-2.py”

TASK: Write a Python program that uses the print() function to display one of the ASCII images provided below or any other ASCII image of your choice. You can find ASCII images by searching "ASCII art" on Google.

```
(\___/)
(=*.*=)
U-----U
```

```
Zzzzzz    |\      ,,,--,,_
          /,`.-'`'-   .-  \-;;,
         |,4-  ) )_   .:.(  `'-'
        '---''(_/.)-'(_\_)
```

```
          />--->
         |  _ _|
        /` =_x )
       /      |
      /  \    )
   _|    | | |
  / _|    | | |
 | ( \___/\_)_)
 \_)
```

EX.1-3 Temperature converter

Research math operators:
https://www.w3schools.com/python/gloss_python_arithmetic_operators.asp

Create a new file: ex1-3.py

TASK. Create a program that converts temperatures from Fahrenheit to Celsius. Ask the user to input a temperature value in Fahrenheit. Convert the temperature to Celsius and display the result.

HINT: $C^o = \frac{5}{9}(F^o - 32^o)$

EXAMPLE: 32°F → (32° - 32) * 5/9 = 0°C

```
|------- Fahrenheit to Celsium converter -------|
Enter temperature(Fahrenheit) F=32
32 F =  0.0 C
```

EX.1-4 Math calculations

Research math operators:
https://www.w3schools.com/python/gloss_python_arithmetic_operators.asp

Create a new file: ex1-4.py

TASK. Write a Python function that takes three input variables: x, y, and z. Your task is to calculate the following math formula using the given input values and display the result:

$$Result = x\left(1 + \frac{x^2}{y^2}\right)^z - xyz$$

TEST (1) x = 100, y = 5, z = 10

(2) x = 10, y = 0, z = 1 (error: division by zero)

(3) x = “abc”, y = 2.3, z = False (error: non-numeric type)

Add comments.

EXAMPLE:

```
Enter numeric values:
x = 1
y = 2
z = 3
result = 19.953125
```

EX.1-5 Concatenation of strings

Research https://www.w3schools.com/python/python_strings_concatenate.asp

Create a new file: ex1-5.py

TASK. Write a Python function that takes three input variables for first name, family name and role (name them properly!). Your task is to combine them in following order:

John Doe (Professor)

then display the result.

Add comments.

(*) You can add strings the same way as numbers: “Hi” +”, ”+ “Alex” = “Hi, Alex”

EXAMPLE:

```
Enter your first name: John
Enter your family name: Doe
Enter your role: Professor
Result: John Doe (Professor)
```

EX.1-6 Time converter

Create a new file: ex1-6.py

TASK. Write a Python program that takes an integer number of seconds as input from the user. The program should then convert this input into the format "dd:hh:mm:ss", representing days, hours, minutes, and seconds, respectively.

EXAMPLE:

user input: 60, result: 0:0:1:0

user input: 10000, result: 0:2:46:40

```
Enter the number of seconds:1000
0 : 0 : 16 : 40
```

Hint:

(1) use floor division (//) and modulus (%). Math operators see here: https://www.w3schools.com/python/gloss_python_arithmetic_operators.asp

(2) use f-string for print. Read more about formatted strings here:

https://www.w3schools.com/python/python_strings_format.asp

EX.1-7 n+nn+nnn calculation

Create a new file: ex1-7.py

TASK. Write a Python program that takes a single-digit integer 'n' as input from the user. The program should then calculate and display the result of the expression: number = n + nn + nnn.

EXAMPLE: if the input is “2”, number = 2 + 22 + 222 = 246

```
|||||||||| n + nn + nnn calculator ||||||||||
Enter any digit n=2
2 + 22 + 222 = 246
```