Practice Exercises_ Week 2

1.What is the output of the following code?

```
value=100
value="StudyHard"
print("value=",value)
```

Answer: **StudyHard**

2. What is the output of the code when it gets executed?

```
name="XiaoboBi"
print(name+666)
```

A. XiaoboBi666
B. XiaoboBi
C. 666
D. TypeError: can only concatenate str (not "int") to str

3.

```
str1="I like " # there is a space after "I like"
str2="Python!"
print(str1+str2)
```

The output of the above program is I like Python

4. Which of the following Python variables are valid?
A. and = 123.45 B. num-2 = "Abc" + "23" C. flag$ = True D. Str_1=False

5. What is the output of the following code?

```
str1="It take him"
num1=3
num2=57
str2="minutes"
print(str1,num1,"hours",num2,str2,"to run the marathon")
```

The output is_it take him 3 hours 57 minutes to run the marathon

6. Analyse the following code

```
s = input("Give a string:")
vCount = 0
vCount += s.count("a")
vCount += s.count("e")
vCount += s.count("i")
vCount += s.count("o")
vCount += s.count("u")
print (vCount)
What the above program does?
```

It counts the vowles(small letters only) in the given string and print it. For example:

Input: LUT university

output: 4

7. .

```
1 text_1 = "This text has a line change.\n"
2 text_1=repr(text_1)
3 text_2="end of line."
4 print(text_1)
5 print(text_2)
```

What is the output of the above program?

first print statement prints the message "This text has a line change\n → here \n will not work because of code line 2 (repr). then it prints "end of line"

8.

```
1 number1 = 3.5
2 number2 = 4.123123
3 number3 = 1234.1231513
4 number1 = round(number1)
5 number2 = round(number2,2)
6 number3 = round(number3,4)
7 print(number1,'\n',number2,'\n', number3)
```

What round () function does in the above program?

It truncates the decimal places based on the number given above.

Example:

number 2 = 4.123123

print(round(numner2,2) returns → 4.12

9. Analyze the code:

```
val_1=int(input("please input 1st num:"))
val_2=int(input("please input 2nd num:"))
print(val_1+val_2)
```

What error will be thrown if the above code gets executed?
Nothing.

10. Analyze the code

```
str="ArtificialIntelligence"
print("the length of str is:",len(str))
```

The output of the code is:22

11. Execute the code:

```
str="AaBbCc99"
print(str.lower())
print(str.upper())
print(str.isalpha())
print(str.isalnum())
print(str.isdigit())
str2="123"
print(str2.isdigit())
str3=("Abc")
print(str3.isalpha())
```

aabbc99

AABBCC99

False

True

False

True

True

II. Coding exercises

1. Write a program that accepts two integer numbers as input from the user then calculate the sum and average of those numbers and print the results.

yourAge.py

```
num1=int(input(" Enter the 1st num:"))
num2=int(input(" Enter the 2nd num:"))
SUM=num1+num2
AVG=SUM/2
print("the sum of two numbers is:",SUM)
print("the average of two numbers is",AVG)
```

2. Write a program that prompts the user to enter the minutes (e.g., 1 billion) and displays the number of years and days for the minutes. For simplicity, assume a year has 365 days. Here is a sample run:

   Enter the number of minutes: 1000000000
   1000000000 minutes is approximately **1902 years and 214 days**.

```
m = int(input("Enter the minutes:"))
year = m//525600
days = (m%525600)//1440

print(year,days)
```

3. Write a program that prompts the user to enter a two-word string (i.e., a string with two words separated with a space), and outputs the second word of the string. Example run here.

   Enter a two-word sentence: LUT University
   The second word is University

   Hint: find() function may be helpful.

```
s = input("Enter the two word string: ")
x = s.index(" ")
print(s[x+1:])
```

4. Write a program that prompts the user to enter two strings as input. The program then replaces all the occurrences of second string from the first string, surrounded by double quotes. Example run here:

Example input:
Enter the first string: To be or not to be
Enter the string that to be double quoted: e
Output:
To b"e" or not to b"e"
Will be released after 30.09.2021 Becaue, it is added in the Week 3 Programming assignment.

5. Write a program that calculates the energy needed to heat water from an initial temperature to a final temperature. Your program should prompt the user to enter the amount of water in kilograms and the initial and final temperatures of the water. The formula to compute the energy is

   Q = M * (final temperature – initial temperature) * 4184

   where M is the weight of water in kilograms, temperatures are in degrees Celsius, and energy Q is measured in joules. Here is a sample run:

   Enter the amount of water in kilograms:55.5
   Enter the initial temperature: 3.5
   Enter the final temperature: 10.5
   The energy needed is 1625484.0

```python
waterKg = float(input("Enter the water in kilograms:"))
iniTemp = float(input("Enter the initial temperature:"))
finTemp = float(input("Enter the final temperature:"))

energy = waterKg * (finTemp - iniTemp) * 4184

print ("The energy:",energy)
```