

PFP - Labwork 03

Questions 1 (2.5 marks)

1. Print the following pattern

Write a program to print the following number pattern using a loop.

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

2. Calculate the sum of all numbers from 1 to a given number

Expected Output:

```
Enter number 10
Sum is: 55
```

Question 2 (2.5 marks) Write a program that performs the following tasks:

1. Display numbers from a list using loop

- The number must be divisible by five
- If the number is greater than 150, then skip it and move to the next number
- If the number is greater than 500, then stop the loop

```
75
150
145
```

2. Count the total number of digits in a number

```
C:\Excercises>C:/Users/AD/AppData/Local/Programs/Python/Python39/python.exe c:/Excercises/Labworks/Lab03/Q2.2.py
Total digits are: 7
```

3. Print list in reverse order using a loop

Given:

```
list1 = [10, 20, 30, 40, 50]
```

Expected output:

```
50
40
30
20
10
```

Question 3 (2.5 marks) Write a program that create a mixed String using the following rules:

1. Create a string made of the middle four characters.

Output:

```
Original String is BillDesctran
Middle four chars are: Desc
Original String is HoSongHu
Middle four chars are: Song
```

2. Append new string in the middle of a given string
Given two strings, **s1** and **s2**. Write a program to create a new string **s3** by appending **s2** in the middle of **s1**.

Given:

```
s1 = "Ault"
s2 = "Kelly"
```

Expected Output:

```
AuKellylt
```

3. Create a new string made of the first, middle, and last characters of each input string
Given two strings, **s1** and **s2**, write a program to return a new string made of s1 and s2's first, middle, and last characters.

Given:

```
s1 = "America"
s2 = "Japan"
```

Expected Output:

```
AJrpan
```

4. Arrange string characters such that lowercase letters should come first

Given:

```
str1 = PyNaTive
```

Expected Output:

```
yaivePNT
```

5. Count all letters, digits, and special symbols from a given string

```
Input string= P@yn2at&dfsdfd&^^&^^&^#i5ve  
total counts of chars, Digits, and symbols
```

```
Chars = 14 Digits = 2 Symbol = 12
```

Question 4 (2.5 marks) Write a program that performs the following tasks:

1. Removal all characters from a string except integers

Given:

```
str1 = 'I am 25 years and 10 months old'
```

Expected Output:

```
2510
```

2. Remove special symbols / punctuation from a string

Given:

```
str1 = "/*Jon is @developer & musician"
```

Expected Output:

```
"Jon is developer musician"
```

3. Remove empty strings from a list of strings

Given:

```
str_list = ["Emma", "Jon", "", "Kelly", None, "Eric", ""]
```

Expected Output:

```
Original list of sting  
['Emma', 'Jon', '', 'Kelly', None, 'Eric', '']  
  
After removing empty strings  
['Emma', 'Jon', 'Kelly', 'Eric']
```

4. Split a string on hyphens

Given:

```
str1 = Emma-is-a-data-scientist
```

Expected Output:

```
Displaying each substring  
  
Emma  
is  
a  
data  
scientist
```