



***INSTITUTE OF INFORMATION TECHNOLOGY***  
***JAHANGIRNAGAR UNIVERSITY***

**Number of Assignment** : 01

**Submission Date** : 02/01/2024

**Course Title** : Digital Image Processing Lab

**Course Code** : ICT - 4202

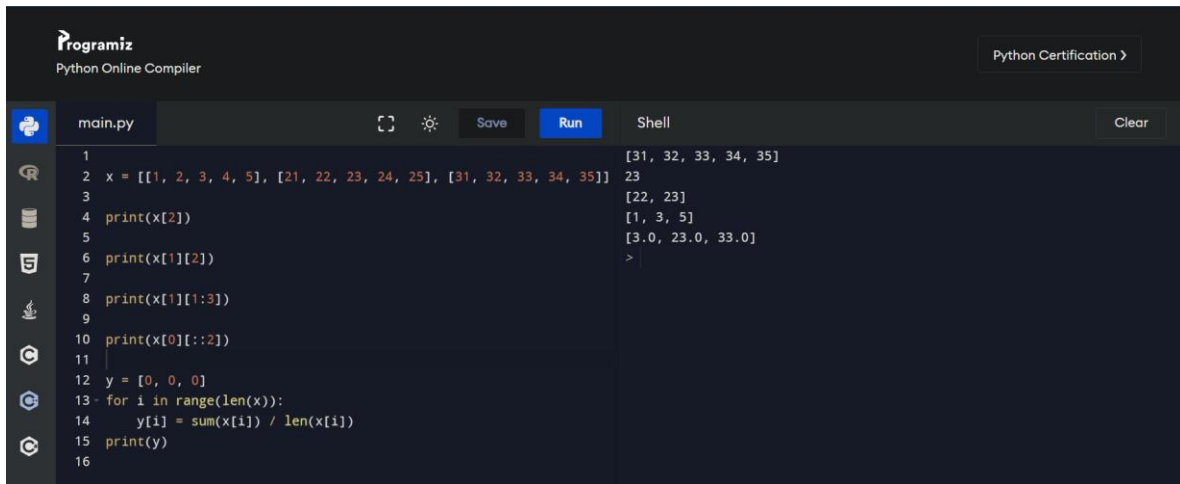
**Submitted To**

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Roll – 2023  
4<sup>th</sup> year 2<sup>nd</sup> Semester  
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## Task: 1



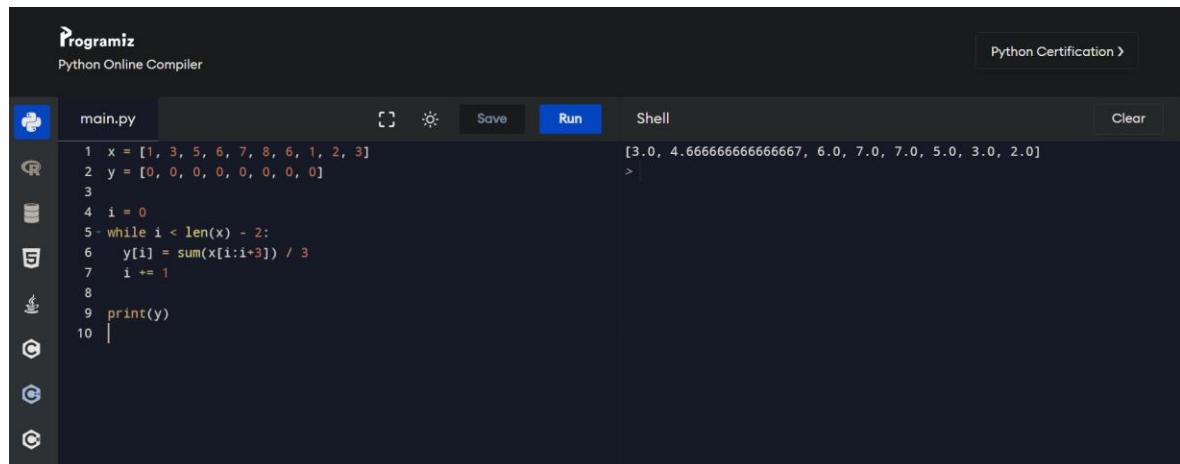
The screenshot shows the Programiz Python Online Compiler interface. The file is named 'main.py'. The code defines a list 'x' with three sub-lists: [1, 2, 3, 4, 5], [21, 22, 23, 24, 25], and [31, 32, 33, 34, 35]. It then prints the second element of 'x' (x[2]), the third element of the second sub-list (x[1][2]), the last three elements of the second sub-list (x[1][1:3]), and the last two elements of the first sub-list (x[0][1:2]). It also calculates the average of each sub-list and prints the resulting list 'y'.

```
1
2 x = [[1, 2, 3, 4, 5], [21, 22, 23, 24, 25], [31, 32, 33, 34, 35]]
3
4 print(x[2])
5
6 print(x[1][2])
7
8 print(x[1][1:3])
9
10 print(x[0][1:2])
11
12 y = [0, 0, 0]
13 for i in range(len(x)):
14     y[i] = sum(x[i]) / len(x[i])
15 print(y)
16
```

The output in the Shell shows the following values:

```
[31, 32, 33, 34, 35]
23
[22, 23]
[1, 3, 5]
[3.0, 23.0, 33.0]
> |
```

## Task: 2 (a)



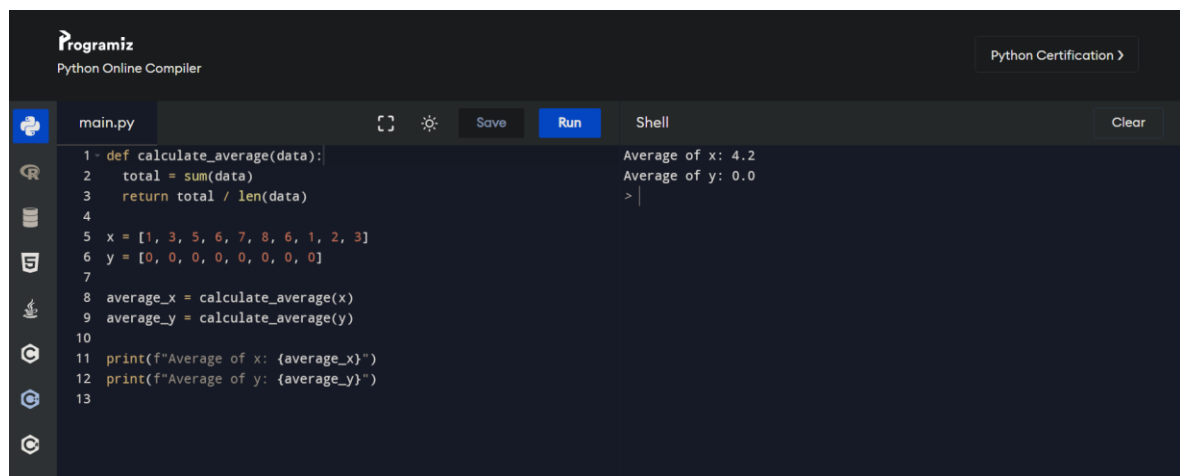
The screenshot shows the Programiz Python Online Compiler interface. The file is named 'main.py'. The code defines a list 'x' with the values [1, 3, 5, 6, 7, 8, 6, 1, 2, 3] and a list 'y' with ten zeros. It then calculates the average of every three elements in 'x' (starting from index 0, then 3, then 6) and stores the results in 'y'. Finally, it prints the list 'y'.

```
1 x = [1, 3, 5, 6, 7, 8, 6, 1, 2, 3]
2 y = [0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
3
4 i = 0
5 while i < len(x) - 2:
6     y[i] = sum(x[i:i+3]) / 3
7     i += 1
8
9 print(y)
10
```

The output in the Shell shows the following values:

```
[3.0, 4.666666666666667, 6.0, 7.0, 7.0, 5.0, 3.0, 2.0]
> |
```

## Task: 2 (b)



The screenshot shows the Programiz Python Online Compiler interface. The file is named 'main.py'. The code defines a function 'calculate\_average' that takes a list 'data' and returns the sum of its elements divided by its length. It then defines a list 'x' with the values [1, 3, 5, 6, 7, 8, 6, 1, 2, 3] and a list 'y' with ten zeros. It calculates the average of 'x' and 'y' using the 'calculate\_average' function and prints the results.

```
1 def calculate_average(data):
2     total = sum(data)
3     return total / len(data)
4
5 x = [1, 3, 5, 6, 7, 8, 6, 1, 2, 3]
6 y = [0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
7
8 average_x = calculate_average(x)
9 average_y = calculate_average(y)
10
11 print(f"Average of x: {average_x}")
12 print(f"Average of y: {average_y}")
13
```

The output in the Shell shows the following values:

```
Average of x: 4.2
Average of y: 0.0
> |
```