Green University of Bangladesh

Department of Computer Science and Engineering
Faculty of Sciences and Engineering
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LAB REPORT NO: 01
Course Title: Data Mining Lab
Course Code: CSE 436
Section: D6

Lab Experiment Name: Python Basics

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Lab Report Status	
Marks:	Signature: .....
Comments:	Date: .....

1 OBJECTIVES/AIM

To practice and demonstrate proficiency in solving basic Python problems, with a focus on input processing, mathematical calculations, and conditional statements.

2 PROCEDURE / ANALYSIS / DESIGN

2.1 Sum of odd and even numbers from a set of numbers:

- Read the set of numbers from the user.
- Initialize variables for the sum of odd and even numbers.
- Iterate through each number in the set and add it to the respective sum based on whether it is odd or even.
- Display the sum of odd numbers and Display the sum of even numbers.
- End the program.

2.2 Check Triangle is Valid or Not:

- Prompt the user to enter the lengths of the three sides of the triangle.
- Read the lengths of the sides provided by the user.
- Check the validity of the triangle by comparing the sum of any two sides with the third side.
- If the sum of any two sides is greater than the third side, consider the triangle valid.
- If the above condition is satisfied, display the message "The triangle is valid."
- If the above condition is not satisfied, display the message "The triangle is not valid."

3 IMPLEMENTATION

3.1 Sum of odd and even numbers from a set of numbers:

```
1 print("*** Sum of ODD/EVEN numbers ***\n")
2
3 def sum_even_odd(numbers):
4     even_sum = 0
5     odd_sum = 0
6
```

```
    for num in numbers:
        if num % 2 == 0:
            even_sum += num
        else:
            odd_sum += num

    return even_sum, odd_sum


input_numbers = input("Enter a set of numbers : ")

numbers = [int(x) for x in input_numbers.split()]

even_sum, odd_sum = sum_even_odd(numbers)

print(f"Sum of even numbers: {even_sum}")
print(f"Sum of odd numbers: {odd_sum}")
```

3.2 Check Triangle is Valid or Not:

```
print("\n*** Triangle is valid or not ***\n")


def is_valid_triangle(a, b, c):
    if a + b > c and b + c > a and c + a > b:
        return True
    else:
        return False

a = float(input('Enter the length of side a: '))
b = float(input('Enter the length of side b: '))
c = float(input('Enter the length of side c: '))

if is_valid_triangle(a, b, c):
    print('Triangle is Valid.')
else:
    print('Triangle is Invalid.')
```

```
*** Sum of ODD/EVEN numbers ***

Enter a set of numbers : 2  1 5 6 7
Sum of even numbers: 8
Sum of odd numbers: 13
```

Figure 1: Output Sum of odd and even numbers from a set of numbers.

4 TEST RESULT / OUTPUT

4.1 Sum of odd and even numbers from a set of numbers:

4.2 Check Triangle is Valid or Not:

```
*** Triangle is valid or not ***

Enter the length of side a: 2
Enter the length of side b: 1
Enter the length of side c: 5
Triangle is Invalid.
```

Figure 2: Output of Triangle is Valid or Not.

5 ANALYSIS AND DISCUSSION

In this report, I successfully tackled a set of basic Python problems. While the problems were straightforward, some required additional assistance from online resources to overcome their trickiness. Overall, I encountered no major difficulties in completing this lab report