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**Green University of Bangladesh**

**Department of Computer Science and Engineering (CSE)**

**Semester: (Spring, Year:2024), B.Sc. in CSE (Day)**

**Lab Report NO #01**

**Course Title: Operating System Lab**

**Course Code: CSE 310 Section: 221 D6**

**Lab Experiment Name: Shell Scripting.**

**Student Details**

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**Lab Date : 11/3/2024**

**Submission Date : 18/3/2024**

**Course Teacher’s Name : Jarin Tasnim Tonvi**

| **Lab Report Status**  **Marks: ………………………………… Signature:.....................**  **Comments:.............................................. Date:..............................** |
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**1. TITLE OF THE LAB REPORT EXPERIMENT**

Shell Scripting - I

**2. OBJECTIVES/AIM**

**The main objective of this lab report is to learn functionalities of the shell programming. Such as,**

* Arithmetic operations using let and expr
* Use of floating point
* Length of a variable
* Take input from the user
* String operations
* Condition Statement

And we are solving two problems using these functionalities which we learned from our previous lab class.

1. We need to find the sum of odd and even numbers of some set of numbers.
2. Checking whether a triangle is valid or not when we have three sides of the triangle.

**3. PROCEDURE**

**For 1st problem:**

1. At first, we created a folder named Monday and from this folder, we opened the terminal.
2. Creating a file using this command, touch sum.sh
3. Checking details of all files using this command, ls -l
4. Now we don’t have access to executing this file so we giving access using this command, chmod+x sum.sh
5. Now we write the program on the sum.sh file.
6. In the program, we declare two variables named sum\_odd and sum\_even.
7. We are taking 4 numbers from user and checking if it is odd or even. Then add the corresponding variable.
8. At last, we are printing the summations.

**For 2nd problem:**

1. Firstly create a file on the Monday folder using the command, touch triangle.sh
2. Giving it access for the execution using the command, chmod +x triangle.sh
3. Now write the program on the triangle.sh file
4. We are taking three variables from the user.
5. If the summation of two variables is greater than the other variable then the triangle is possible otherwise it is not possible.
6. We are implementing this logic using an if conditional statement.

**4. IMPLEMENTATION**

**For 1st problem:**

Source Code:

#!/bin/bash

sum\_odd=0

sum\_even=0

read -p "Enter 1st number: " n1

read -p "Enter 2nd number: " n2

read -p "Enter 3rd number: " n3

read -p "Enter 4th number: " n4

# For the first variable

if [ $(( n1 % 2 )) == 0 ]

then

sum\_even=$(( sum\_even + n1 ))

else

sum\_odd=$(( sum\_odd + n1 ))

fi

#second variable

if [ $(( n2 % 2 )) == 0 ]

then

sum\_even=$(( sum\_even + n2 ))

else

sum\_odd=$(( sum\_odd + n2 ))

fi

#third variable

if [ $(( n3 % 2 )) == 0 ]

then

sum\_even=$(( sum\_even + n3 ))

else

sum\_odd=$(( sum\_odd + n3 ))

fi

#fourth variable

if [ $(( n4 % 2 )) == 0 ]

then

sum\_even=$(( sum\_even + n4 ))

else

sum\_odd=$(( sum\_odd + n4 ))

fi

echo "The sum of even: $sum\_even"

echo "The sum of odd: $sum\_odd"

**For 2nd problem:**

#!/bin/bash

read -p "Enter the first side:" s1

read -p "Enter the second side:" s2

read -p "Enter the third side:" s3

if [ $(( $s1 + $s2 )) -gt $s3 ] && [ $(( $s2 + $s3 )) -gt $s1 ] && [ $(( $s1 + $s3 )) -gt $s2 ]

then

echo "The triangle is possible."

else

echo "The triangle is not possible."

fi

**5. TEST RESULT / OUTPUT**

**For 1st problem:**

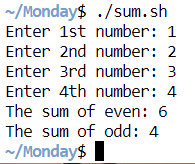
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fig1. Here we are executing the sum.sh file and we are giving 4 variables and it shows us the sum of even and odd numbers.

**For 2nd problem:**

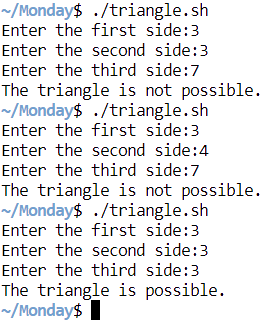


fig2. We are executing the triangle.sh file and giving 3 sides of a triangle to check whether it is possible or not to make a triangle.

**6. ANALYSIS AND DISCUSSION**

**For 1st problem:**

* In this exercise, we are finding the sum of odd numbers and even numbers from a set of numbers.
* I implemented the functionalities that I learned from the previous class.
* I didn’t know how to check if a number is odd or even in shell programming.
* I googled it and found out that it is the same way as I learned previously. Using ‘%’ this symbol.
* After implementation, the output of the program comes out perfectly.

**For 2nd problem:**

* In this exercise, we are trying to check whether it is possible or not to make a triangle with given 3 sides.
* Actually, I implemented the same program for this problem in the lab for CLP, that’s why it is a piece of cake now for me.

**7. SUMMARY**

This lab exercise demonstrates the successful implementation of required problems using the functionality of shell programming which I learned from the previous class. I implemented two exercises properly with the shell programming that I learned from the previous class. And I solved the problems without any difficulties.