LAB Manual

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Semester : IV	**Year AY 23-24**
Subject Title: Operating Systems Lab	
EXPERIMENT No : 4	**Assignment No: 5**
TITLE : Arithmetic Operations	**DoP : 5/02/2024**

Aim: Implement and demonstrate arithmetic operations

Learning Outcomes: *1. To understand the arithmetic operation*

2. To Demonstrate the arithmetic operations using Linux command.

***Hardware/Software*: oracle VM Virtualbox, Ubuntu**

Problem Definition:

A program should be written where all the following conditions should be satisfied.

1. Perform basic operations like Addition, Subtraction, Multiplication, and Division. Accept input from a user.

2. Calculate the area and perimeter of the circle. Accept radius from a user. (Assume pi=3.14)

3. Calculate employees' gross salary, where DA is 1.65% of the basic salary, and HRA is 0.30% of the basic salary. Accept the value of basic salary from a user.

4. Calculate the mean salary given by a company if the basic salary of employees A, B, C, and D are Rs.1200, 1400, 1350, and 1800 respectively.

Theory: handwritten

Algorithm : softcopy format

1)step-1=>Taking input a and b from user

step-2=>Performing arithmetic operations

step-3=>Show output of all the operations

2)step-1=>Take radius input from user and initialize pi=3.14

step-2=>Perform mathematical calculation for area and perimeter.

step-3=>Show output of area and perimeter calculations

3)step-1=>Take salary input from user

step-2=>Calculate DA and HRA according to the given ratio

step-3=>Show output of gross salary calculation

4)step-1=>Initialize the given salary to variables

step-2=>calculate mean

step-3=>Show output of calculated mean

Program: Softcopy format

Open

Exp3_1.sh
~/Desktop/OS

```
#! /bin/sh

echo "Enter value of a : "
read a
echo "Enter value of b : "
read b
val1=`expr $a + $b`
val2=`expr $a \* $b`
val3=`expr $b - $a`
val4=`expr $b / $a`
echo "a+b=$val1"
echo "a*b=$val2"
echo "b-a=$val3"
echo "b/a=$val4"
```

Open

Exp3_2.sh
~/Desktop/OS

```
#! /bin/sh

echo "Enter Radius of circle : "
read rad
pi=3.14
ar=`echo "$pi*$rad*$rad" | bc`
pe=`echo "2*$pi*$rad" | bc`

echo "Area is : $ar"
echo "Perimeter is : $pe"
```

Open

Exp3_3.sh
~/Desktop/OS

```
#! /bin/sh

echo "What is your salary?"
read sal

da=1.65
hra=0.30

daf=`echo "$da*$sal" | bc`
hraf=`echo "$hra*$sal" | bc`
gr=`echo "$daf+$hraf+$sal" | bc`
echo "DA is : $daf"
echo "HRA is : $hraf"
echo "Gross Salary is : $gr"
```

Open

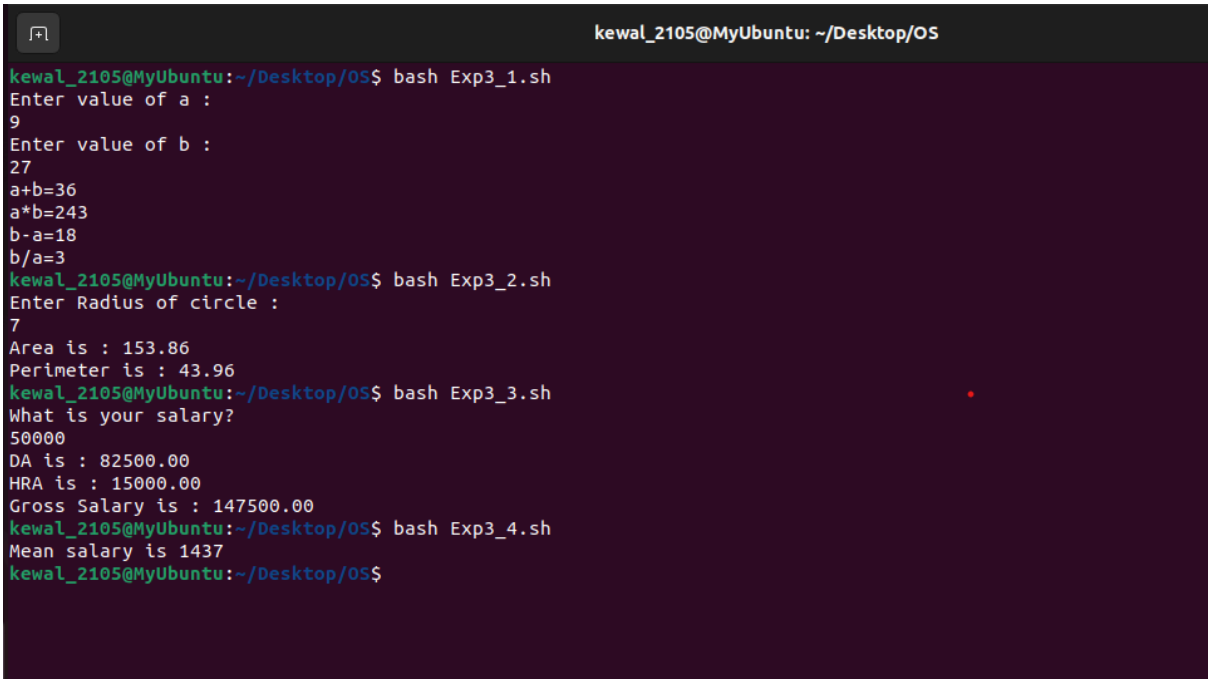
Exp3_4.sh
~/Desktop/OS

```
#! /bin/sh

a=1200
b=1400
c=1350
d=1800

x=`echo "$a+$b+$c+$d" | bc`
mean=`echo "$x/4" | bc`

echo "Mean salary is $mean"
```

Steps to execute the program: written in algorithm

Conclusion: Successfully performed the given shell script codes.

Output: snapshots of the demonstration



assessment schemes.

Attendance	Discipline	Short oral	Correctness of Lab Report	Timely completion of Lab Report	Total marks (10)	Signature of Teacher with Date

Open

hello.sh
~/Desktop/OS

```
#1 /bin/sh

echo "Hello World!"
echo "What is your name?"
read name
echo "Your name is $name."

a=10
b=20
val1=`expr $a + $b`
val2=`expr $a \* $b`
val3=`expr $b - $a`
val4=`expr $b / $a`
echo "a+b=$val1"
echo "a*b=$val2"
echo "b-a=$val3"
echo "b/a=$val4"

#the below method only works for integers
x=4
y=2
echo $(($x + $y))
echo $(($x * $y))
echo $(($x / $y))
echo $(($x - $y))

z=7
echo "Z is $z"
echo "Incrementing Z by 7"
((z+=7))
echo "Z is $z"
```