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**SUBJECT NAME: FUNDAMENTALS OF COMPUTING FOR  
DATA ANALYSIS.**

**SUBJECT CODE: CSA5779**

**SLOT NAME: D**

## **SHELL PROGRAM:**

**EXPERIMENT NO:1**

**EXPERIMENT NAME:** Summing up Even Number series

## **SHELL PROGRAM:**

```
#!/bin/bash
sum=0
n=10
for ((i=2; i<=n; i+=2))
do
    sum=$((sum + i))
done
echo "Sum of even numbers up to $n is: $sum"
~
```

## **OUTPUT:**

```
localhost:~# ./even.sh
Sum of even numbers up to 10 is: 30
localhost:~#
```

**EXPERIMENT NO:2**

**EXPERIMENT NAME:** Summing up odd Number series

## **SHELL PROGRAM:**

```
#!/bin/bash
sum=0
n=10
for((i=1;i<=n;i+=2))
do
    sum=$((sum+i))
done
echo "sum of odd numbers uo to $n is: $sum"
~
```

## **Output:**

```
sum of odd numbers uo to 10 is: 25
localhost:~#
```

### EXPERIMENT NO:3

**EXPERIMENT NAME:** Finding given number is Armstrong or not?

**SHELL PROGRAM:**

```
#!/bin/bash
read -p "Enter a number: " num
temp=$num
sum=0
while [ $temp -gt 0 ]
do
    digit=$((temp % 10))
    sum=$((sum + digit * digit * digit))
    temp=$((temp / 10))
done
if [ $sum -eq $num ]
then
    echo "$num is an Armstrong number."
else
    echo "$num is not an Armstrong number."
fi
~
```

**OUTPUT:**

```
Enter a number: 153
153 is an Armstrong number.
```

### EXPERIMENT NO:4

**EXPERIMENT NAME:** Summing up any n numbers and finding average

**SHELL PROGRAM:**

```
#!/bin/bash
read -p "Enter the number of elements: " n
sum=0
for ((i=1; i<=n; i++))
do
    read -p "Enter number $i: " num
    sum=$((sum + num))
done
average=$(bc -l <<< "scale=2; $sum / $n")
echo "Sum of the numbers is: $sum"
echo "Average of the numbers is: $average"
~
```

## OUTPUT:

```
Enter the number of elements: 5
Enter number 1: 10
Enter number 2: 12
Enter number 3: 14
Enter number 4: 16
Enter number 5: 18
Sum of the numbers is: 70
Average of the numbers is: 14.00
```

## EXPERIMENT NO:5

**EXPERIMENT NAME:** Finding whether the given integer is odd or even

### SHELL PROGRAM:

```
#!/bin/bash
echo "Enter an integer: "
read num
if (( num % 2 == 0 )); then
    echo "$num is even."
else
    echo "$num is odd."
fi
```

## OUTPUT:

```
Enter an integer:
7
7 is odd.
```

## EXPERIMENT NO:6

**EXPERIMENT NAME:** Finding the given integer is positive or negative

```
#!/bin/bash
echo "Enter an integer: "
read num
if (( num > 0 )); then
    echo "$num is positive."
elif (( num < 0 )); then
    echo "$num is negative."
else
    echo "$num is zero."
fi
```

#### OUTPUT:

```
Enter an integer:
12
12 is positive.
```

#### EXPERIMENT NO:7

**EXPERIMENT NAME:** Swapping two numbers with a temporary variable

#### SHELL PROGRAM:

```
#!/bin/bash
echo "Enter two numbers: "
read num1 num2
temp=$num1
num1=$num2
num2=$temp
echo "Swapped numbers: $num1 and $num2"
```

#### OUTPUT:

```
Enter two numbers:
8 9
Swapped numbers: 9 and 8
```

#### EXPERIMENT NO:8

**EXPERIMENT NAME:** Swapping two numbers without a temporary variable

#### SHELL PROGRAM:

```
#!/bin/bash
echo "Enter two numbers: "
#!/bin/bash
echo "Enter two numbers: "
read num1 num2
num1=$((num1 + num2))
num2=$((num1 - num2))
num1=$((num1 - num2))
echo "Swapped numbers: $num1 and $num2"
```

## OUTPUT:

```
Enter two numbers:
5 10
Swapped numbers: 10 and 5
```

## EXPERIMENT NO:9

**EXPERIMENT NAME:** Finding the biggest out of 2 integer numbers

### SHELL PROGRAM:

```
#!/bin/bash
echo "Enter two numbers: "
read num1 num2
if (( num1 > num2 )); then
    echo "$num1 is the biggest."
else
#!/bin/bash
echo "Enter two numbers: "
read num1 num2
if (( num1 > num2 )); then
    echo "$num1 is the biggest."
else
    echo "$num2 is the biggest."
fi
```

## OUTPUT:

```
Enter two numbers:
10 15
15 is the biggest.
```

## EXPERIMENT NO:10

EXPERIMENT NAME: Finding the biggest out of n integers

### SHELL PROGRAM:

```
#!/bin/bash
echo "Enter the number of integers: "
read n
echo "Enter $n integers: "
read first_num
largest=$first_num
for (( i=2; i<=n; i++ ))
do
    read num
    if (( num > largest )); then
        largest=$num
    fi
done
echo "the largest number is:$largest"
```

### OUTPUT:

```
Enter the number of integers:
5
Enter 5 integers:
1
2
4
5
6
the largest number is:6
```