**LINUX & SHELL PROGRAMMING LAB ASSIGNMENT**

1. **Write a shell script to find out sum of all elements of a array.**

pc-171@gehu-HP-EliteDesk-800-G2-SFF:~/Desktop/RAWATAMIT$gedit script1.sh

#!/bin/bash

echo " Enter limit: "

read n

echo " Enter numbers :"

i=0

while [ $i -lt $n ]

do

read x

arr[i]=$x

i=$(( $i + 1 ))

done

sum=0

for i in "${arr[@]}"

do

sum=$(( $sum + $i ))

done

echo " sum of elements : $sum "

pc-171@gehu-HP-EliteDesk-800-G2-SFF:~/Desktop/RAWATAMIT$bash script1.sh

Enter limit:

5

Enter numbers:

1

2

3

4

5

Sum of elements : 15

1. **Write a shell script to find out the largest element of the array.**

pc-171@gehu-HP-EliteDesk-800-G2-SFF:~/Desktop/RAWATAMIT$ gedit script2.sh

#!/system/bin/bash

echo " Enter limit: "

read n

echo " Enter numbers :"

i=0

while [ $i -lt $n ]

do

read x

arr[i]=$x

i=$(( $i + 1 ))

done

i=0

large=${arr[i]}

for i in "${arr[@]}"

do

if [ $i -gt $large ] ;

then

large=$i

fi

done

echo " largest number of all elements in the array : $large “

pc-171@gehu-HP-EliteDesk-800-G2-SFF:~/Desktop/RAWATAMIT$ bash script2.sh

Enter limit :

5

Enter numbers :

89

76

56

34

98

Largest number of all element in the array : 98

1. **Write a shell script to count number of elements having even value in given array.**

pc-171@gehu-HP-EliteDesk-800-G2-SFF:~/Desktop/RAWATAMIT$gedit script3.sh

#!/bin/bash

echo " Enter limit: "

read n

echo " Enter numbers :"

i=0

while [ $i -lt $n ]

do

read x

arr[i]=$x

i=$(( $i + 1 ))

done

i=0

count=0

for i in "${arr[@]}"

do

a=$(( $i % 2 ))

if [ $a -eq 0 ]

then

count=$(( $count + 1 ))

fi

done

echo " Total no of even element in the array : $count "

pc-171@gehu-HP-EliteDesk-800-G2-SFF:~/Desktop/RAWATAMIT$bash script3.sh

Enter limit :

5

Enter numbers :

2

3

4

5

6

Total no of even elements in the array : 3

1. **Write a shell script to search an element in a array by using linear search algorithm.**

pc-171@gehu-HP-EliteDesk-800-G2-SFF:~/Desktop/RAWATAMIT$ gedit script4.sh

#!/bin/bash

echo " Enter limit: "

read n

echo " Enter numbers :"

i=0

while [ $i -lt $n ]

do

read x

arr[i]=$x

i=$(( $i + 1 ))

done

echo " Enter the number you want to search :"

read a

for i in "${arr[@]}"

do

if [ ${arr[$i]} -eq $a ]

then

k=1

break

fi

done

p=$(( $i + 1 ))

if [ $k -eq 1 ]

then

echo " Element found at position : $p "

else

echo " Element not found "

fi

pc-171@gehu-HP-EliteDesk-800-G2-SFF:~/Desktop/RAWATAMIT$ bash script4.sh

Enter limit :

5

Enter numbers :

4

8

12

16

20

Enter the number you want to search :

12

Element found at position :3

1. **Write a shell script to search an element in a array by using binary search algorithm.**

pc-171@gehu-HP-EliteDesk-800-G2-SFF:~/Desktop/RAWATAMIT$ gedit script5.sh

#!/bin/bash

echo " Enter limit: "

read n

echo " Enter numbers :"

i=1

while [ $i -le $n ]

do

read x

arr[i]=$x

i=$(( $i + 1 ))

done

echo " Enter the number you want to search :"

read a

lb=1

ub=$n

while [ $lb -le $ub ]

do

x=$(( $ub + $lb ))

mid=$(( $x / 2 ))

if [ $a -lt ${arr[$mid]} ]

then

ub=$(( $mid - 1))

elif [ $a -gt ${arr[$mid]} ]

then

lb=$(( $mid + 1 ))

elif [ $a -eq ${arr[$mid]} ]

then

echo " $a found at position $mid "

break

fi

done

if [ $lb -gt $ub ]

then

echo " element not found "

fi

pc-171@gehu-HP-EliteDesk-800-G2-SFF:~/Desktop/RAWATAMIT$ bash script5.sh

Enter limit :

5

Enter numbers :

78

67

54

98

34

Enter the number you want to search :

54

54 found at position 3