Experiment - 8

8. Shell Programming – Arrays

8.1 Write a C program to read and print elements of array.

```
#!/bin/bash
echo "Enter the size of array: "
read size
echo "Enter $size elements: "
for ((i=0;i<size;i++))
do
read arr[$i]
done
echo "Contents of array: "
for ((i=0;i<size;i++))
do
echo ${arr[$i]}
done
```

8.2 Write a C program to find sum of all array elements.

```
#!/bin/bash
echo "Enter size (n): "
read n
i=1
sum=0
echo "Enter numbers: "
while [ $i -le $n ]
do
 read num                    #get number
 sum=$((sum + num))          #sum+=num
 i=$((i + 1))
done
echo $sum
```

8.3 Write a C program to find reverse of an array.

```
#!/bin/bash
echo "enter the size of array: "
read s
echo "enter the elements of array: "
for ((i=0; $i<$s; i++))
do
 read a[$i]
done
j=`expr $s - 1`
for ((i=0; $i<$j; i++))
do
temp=${a[$i]}
 a[$i]=${a[$j]}
 a[$j]=$temp
 j=`expr $j - 1`
done
echo "The reverse array is: "
for ((i=0; $i<$s; i++))
do
echo ${a[$i]}
done
```

8.4 Write a C program to search an element in an array.

```
#!/bin/bash
arr=("apple" "banana" "mango" "cherry" “Kiwi" "grape")
echo "Enter name of the element: "
read element
index=-1
for i in "${!arr[@]}";
do
 if [[ "${arr[$i]}" = "${element}" ]];
 then
 index=$i
 break
 fi
done
if [ $index -gt -1 ];
then
echo "Index of Element in Array is : $index"
else
 echo "Element is not in Array."
fi
```

8.5 Write a C program to sort array elements in ascending or descending order.

```
#!/bin/bash
read -p "Enter The Number: " n
for ((i=0; i<$n; i++))
do
read -p "Enter value of arr[$i]: " arr[$i]
done
#sorting code (Bubble Sorting)
for ((i=0; i<$n; i++))
do
for ((j=0; j<n-i-1; j++))
do
if [ ${arr[j]} -lt ${arr[$((j+1))]} ]
then
#swapping
temp=${arr[j]}
arr[$j]=${arr[$((j+1))]}
arr[$((j+1))]=$temp
fi
done
done
echo "Numbers in Descending order: " ${arr[*]}
```