INDEX

LAB ASSIGNMENT 6

Ques 1. Write a shell script to display 10 numbers it using an array.

```
#display 10 numbers in array
for((i=0;i<10;i++))
do
echo "Enter `expr $i + 1` Number"
read arr[$i]
done
echo "Elements of Array"
for((i=0;i<10;i++))
do
echo ${arr[$i]}
done
```

```
nikhil@ubuntu:~/osLab/lab6$ bash display-num-in-array.sh
Enter 1 Number
69
Enter 2 Number
4
Enter 3 Number
5
Enter 4 Number
2
Enter 5 Number
1
Enter 6 Number
3
Enter 7 Number
667
Enter 8 Number
5
Enter 9 Number
4
Enter 10 Number
30
Elements of Array
69
4
5
2
1
3
667
5
4
30
nikhil@ubuntu:~/osLab/lab6$
```

Ques 2. Write a shell script to find out maximum and minimum element from given array of elements.

```
#Max and Min Element of Array
echo "Enter Number of Elements: "
read n
for((i=0;i<n;i++))
do
echo "Enter `expr $i + 1` Number"
read arr[$i]
done

small=${arr[0]}
large=${arr[0]}

for((i=0;i<n;i++))
do
if [ ${arr[$i]} -gt $large ]
then
large=${arr[$i]}
elif [ ${arr[$i]} -lt $small ]
then
small=${arr[$i]}
fi
done

echo "Smallest Element in Array is $small"
echo "Largest Elemnt in Array is $large"
```

```
nikhil@ubuntu:~/osLab/lab6$ bash max-min-in-array.sh
Enter Number of Elements:
5
Enter 1 Number
10
Enter 2 Number
20
Enter 3 Number
30
Enter 4 Number
60
Enter 5 Number
50
Smallest Element in Array is 10
Largest Elemnt in Array is 60
nikhil@ubuntu:~/osLab/lab6$
```

Ques 3. Write a shell script to display location of an element in an array.

```
#Find Index of an Array
echo "Total Number of Lements in Array :"
read n
echo "Enter the elements in the array :"
for ((i = 0; i < n; i++))
do
    read arr[i]
done
echo "Array: "
echo ${arr[*]}
echo "Index of Array to be Updated: "
read loc
echo "Enter your choice : 1.Insert 2.Delete "
read ch
case $ch in
    1)  echo "Enter the element to be entered : "
        read no
        for ((i=n;i>loc;i--))
        do
            arr[i]=${arr[i-1]}
        done
        arr[loc]=$no
        ;;
    2)  for((i=loc;i<n;i++))
        do
            arr[i]=${arr[i+1]}
        done
        n=`expr $n - 1`
        ;;
    *)  echo "Wrong choice !";;
esac
echo "The altered array is : "
echo ${arr[*]}
```

```
nikhil@ubuntu:~/osLab/lab6$ bash index-of-array.sh
Enter 1 Number
20
Enter 2 Number
30
Enter 3 Number
50
Enter 4 Number
33
Enter 5 Number
99
Enter 6 Number
69
Enter 7 Number
78
Enter 8 Number
12
Enter 9 Number
3
Enter 10 Number
4
Elements of Array
20
30
50
33
99
69
78
12
3
4
Enter the element you want to search:
69
69 found at index 5
```

Ques 4. Write a shell script to merge content of two different arrays.

```
#Merge two Arrays
echo "Total Elements in Array 1: "
read n1
echo "Input elements in Array 1 :"
for ((i = 0; i < n1; i++))
do
    read arr1[i]
done
echo "Total Elements in Array 2 :"
read n2
echo "Input Elements in Array 2 :"
for ((i = 0; i < n2; i++))
do
    read arr2[i]
done
k=0
for ((i = 0; i < n1; i++))
do
    arr[k]=${arr1[i]}
    k=`expr $k + 1`
done
for ((i = 0; i < n2; i++))
do
    arr[k]=${arr2[i]}
    k=`expr $k + 1`
done
echo "Merged Array: "
echo ${arr[*]}
```

```
nikhil@ubuntu:~/osLab/lab6$ bash mergeArray.sh
Total Elements in Array 1:
5
Input elements in Array 1 :
1
2
3
4
5
Total Elements in Array 2 :
5
Input Elements in Array 2 :
6
7
8
9
10
Merged Array:
1 2 3 4 5 6 7 8 9 10
nikhil@ubuntu:~/osLab/lab6$
```

Ques 5. Write a shell script to sort an array of 10 numbers.

```
#Sort Elements of Array
echo "Enter 10 ELements in Array: "
for ((i = 0; i < 10; i++)); do
    read arr[i]
done
echo "The entered array is :"
echo ${arr[*]}
for ((i = 0; i < 10; i++))
do
    for ((j = 0; j < 10-i-1; j++))
    do
        k=`expr $j + 1`
        if [ ${arr[j]} -gt ${arr[k]} ]
        then
            temp=${arr[j]}
            arr[j]=${arr[k]}
            arr[k]=$temp
        fi
    done
done
echo "The sorted array is :"
echo ${arr[*]}
```

```
nikhil@ubuntu:~/osLab/lab6$ bash sortArray.sh
Enter 10 ELements in Array:
10
9
8
7
6
5
4
3
2
1
The entered array is :
10 9 8 7 6 5 4 3 2 1
The sorted array is :
1 2 3 4 5 6 7 8 9 10
nikhil@ubuntu:~/osLab/lab6$
```

Ques 6. Write a shell script to insert & delete from a particular location in an given array of elements.

```
#Insert and Delete from an Array
echo "Total Number of eLements in Array :"
read n
echo "Enter the elements in the array :"
for ((i = 0; i < n; i++))
do
    read arr[i]
done
echo "Array: "
echo ${arr[*]}
echo "Index of Array to be Updated: "
read loc
echo "Enter your choice : 1.Insert 2.Delete "
read ch
case $ch in
    1)  echo "Enter the element to be entered : "
        read no
        for ((i=n;i>loc;i--))
        do
            arr[i]=${arr[i-1]}
        done
        arr[loc]=$no
        ;;
    2)  for((i=loc;i<n;i++))
        do
            arr[i]=${arr[i+1]}
        done
        n=`expr $n - 1`
        ;;
    *)  echo "Wrong choice !";;
esac
echo "The altered array is : "
echo ${arr[*]}
```

```
nikhil@ubuntu:~/osLab/lab6$ bash insert_delete.sh
Total Number of eLements in Array :
5
Enter the elements in the array :
1
3
2
4
5
Array:
1 3 2 4 5
Index of Array to be Updated:
4
Enter your choice : 1.Insert 2.Delete
2
The altered array is :
1 3 2 4
nikhil@ubuntu:~/osLab/lab6$
```

Ques 7. Write a shell script to delete duplicate elements from a given array of elements.

```
#Delete Duplicate Element from Array
echo "Total Number of Elements in Array: "
read n
echo "Enter the $n elements in array :"
for ((i = 0; i < n; i++))
do
    read arr[i]
done
echo "The entered array is : "
echo ${arr[*]}
for ((i = 0; i < n; i++))
do
    for ((j = i+1; j < n; j++))
    do
        if [ ${arr[i]} -eq ${arr[j]} ]
        then
            for((k=j;k<n;k++))
            do
                arr[k]=${arr[k+1]}
            done
            n=`expr $n - 1`
        fi
    done
done
echo "Updated Array: "
echo ${arr[*]}
```

```
nikhil@ubuntu:~/osLab/lab6$ bash delete_duplicate.sh
Total Number of Elements in Array:
5
Enter the 5 elements in array :
10
20
30
30
40
The entered array is :
10 20 30 30 40
Updated Array:
10 20 30 40
nikhil@ubuntu:~/osLab/lab6$
```

Ques 8. Write a shell script to display elements of an array in reverse order.

```
#Reverse Elements of an Array

echo "Enter Size of Array: "
read n
echo "Enter $n Elements of Array: "
for ((i=0; $i<$n; i++))
do
read a[$i]
done
j=`expr $n - 1`

for ((i=0; $i<$j; i++))
do
temp=${a[$i]}
a[$i]=${a[$j]}
a[$j]=$temp
j=`expr $j - 1`
done

echo "Reversed Array"
for ((i=0; $i<$n; i++))
do
echo ${a[$i]}
done
```

```
nikhil@ubuntu:~/osLab/lab6$ bash reverse-array.sh
Enter Size of Array:
5
Enter 5 Elements of Array:
1
2
3
4
5
Reversed Array
5
4
3
2
1
nikhil@ubuntu:~/osLab/lab6$
```

Ques 9. Write a shell script to display the 1st & 2nd element from a given array of elements.

```
#Display 1st and 2nd Element from Array
echo "Enter Size of Array: "
read num
echo "Enter $num Elements in Array: "
for ((i=0; i<num; i++))
do
    read a[i]
done
echo "1st element : ${a[0]}"
echo "2nd element : ${a[1]}"
```

```
nikhil@ubuntu:~/osLab/lab6$ bash display-1st-2nd-Element.sh
Enter Size of Array:
5
Enter 5 Elements in Array:
10
20
30
40
50
1st element : 10
2nd element : 20
nikhil@ubuntu:~/osLab/lab6$
```