LAB REPORT - 3

Topic: Shell Programs

Course Name: Sessional Based on CSE 3201 (Operating System)

Course No: CSE 3202

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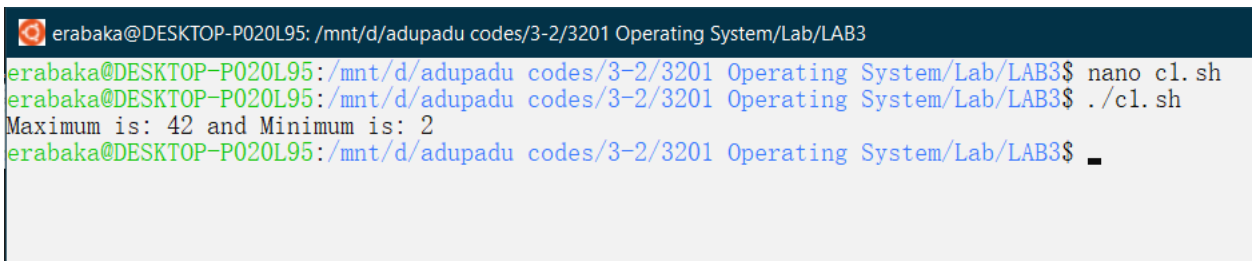
Problems:

1. Print the maximum and minimum number from a given array of numbers (Static)

Code:

Output:



2. Print the maximum and minimum number from a given array of numbers (Dynamic)

Code:

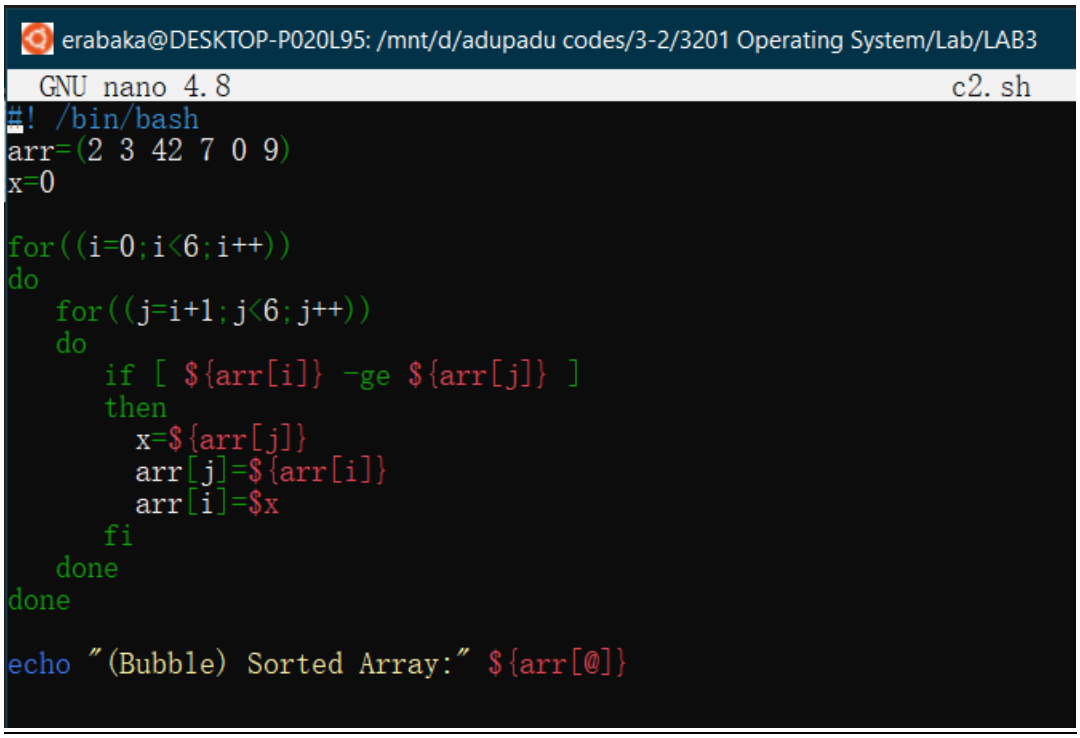
```
erabaka@DESKTOP-P020L95: /mnt/d/adupadu codes/3-2/3201 Operating System/Lab/LAB3
  GNU nano 4.8                                                    c11.sh
#! /bin/bash
arr=()
for((w=0;w<5;w++))
do
   read a
   arr[w]=$a
done

max=0
min=99999

for ((i=0;i<5;i++))
do
   if [ ${arr[i]} -ge $max ]
      then
      max=${arr[i]}
   fi
   if [ ${arr[i]} -le $min ]
      then
      min=${arr[i]}
   fi
done

echo Maximum is: $max and Minimum is: $min
```

Output:

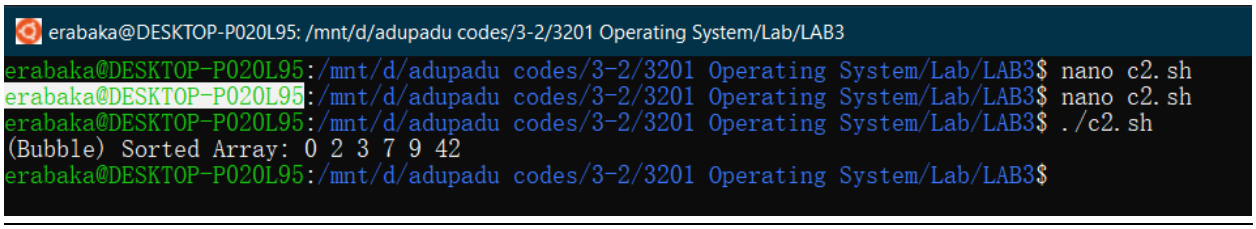
```
erabaka@DESKTOP-P020L95: /mnt/d/adupadu codes/3-2/3201 Operating System/Lab/LAB3
erabaka@DESKTOP-P020L95:/mnt/d/adupadu codes/3-2/3201 Operating System/Lab/LAB3$ nano c11.sh
erabaka@DESKTOP-P020L95:/mnt/d/adupadu codes/3-2/3201 Operating System/Lab/LAB3$ ./c11.sh
45
2
4
5
-1
Maximum is: 45 and Minimum is: -1
erabaka@DESKTOP-P020L95:/mnt/d/adupadu codes/3-2/3201 Operating System/Lab/LAB3$
```

3. Sort a given array of numbers (Static)

Code:



Output:



4. Sort a given array of numbers (Dynamic)

Code:

```
erabaka@DESKTOP-P020L95: /mnt/d/adupadu codes/3-2/3201 Operating System/Lab/LAB3
  GNU nano 4.8                                                    c22.sh
#! /bin/bash
arr=()
for((w=0;w<6;w++))
do
   read b
   arr[w]=$b
done
x=0

for((i=0;i<6;i++))
do
   for((j=i+1;j<6;j++))
   do
      if [ ${arr[i]} -ge ${arr[j]} ]
      then
        x=${arr[j]}
        arr[j]=${arr[i]}
        arr[i]=$x
      fi
   done
done

echo "(Bubble) Sorted Array:" ${arr[@]}
```

Output:

```
erabaka@DESKTOP-P020L95: /mnt/d/adupadu codes/3-2/3201 Operating System/Lab/LAB3
erabaka@DESKTOP-P020L95:/mnt/d/adupadu codes/3-2/3201 Operating System/Lab/LAB3$ nano c22.sh
erabaka@DESKTOP-P020L95:/mnt/d/adupadu codes/3-2/3201 Operating System/Lab/LAB3$ ./c22.sh
78
-90
-4
3
0
23
(Bubble) Sorted Array: -90 -4 0 3 23 78
erabaka@DESKTOP-P020L95:/mnt/d/adupadu codes/3-2/3201 Operating System/Lab/LAB3$
```

Discussion: The problem set was to define scopes that will extract the maximum and minimum value from a given array and to sort the array in sorted manner (Ascending or Descending). Here, the max-min program was executed successfully, both static and dynamically. And the sort was performed via bubble sort and in an ascending manner.