Vishwakarma Institute of Technology, Pune-37

(Anautonomous Institute of Savitribai Phule Pune University)

Department of Multidisciplinary Engineering

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1. Finding The Difference Between Today And Given Date From Input In Days

```bash
#!/bin/bash

date_diff(){
    today=$(date +"%Y-%m-%d")
    read -p "Enter a date (YYYY-mm-dd): " userDate

    if [[ ! $userDate =~ ^[0-9]{4}-[0-9]{2}-[0-9]{2}$ ]]; then
     echo "Enter a valid date (YYYY-mm-dd)"
     exit 1
    fi

    dateDiff=$(( ($(date -d "$userDate" +%s) - $(date -d "$today" +%s)) / 86400 ))
    echo "The difference between $userDate and today ($today) is $dateDiff days."
}

date_diff
```

```
Admin@DESKTOP-8R2MHT8 MINGW64 /d/MY USERS/Aditya/ENGINEERING/Sem2/OS/Contents (master)
$ bash date_diff.sh
Enter a date (YYYY-mm-dd): 2024-04-23
The difference between 2024-04-23 and today (2024-01-28) is 86 days.
```

Concepts Covered – Function, Condition Statements , Commands, Accepting Input , Arithmetic Operations.

2. Using '*' Designing 'L' Pattern In Shell Script .

```bash
#!/bin/bash

printStar(){
    size=5

    for ((i = 1; i <= size; i++)); do
```

```
        for ((j = 1; j <= size; j++)); do
            if [ $i -eq $((size / 2 + 1)) ] || [ $j -eq $((size / 2 + 1)) ]; then
                echo -n "xx"
            else
                echo -n " "
            fi
        done
        echo ""
    done
}


printStar
```

```
Admin@DESKTOP-8R2MHT8 MINGW64 /d/MY USERS/Aditya/ENGINEERING/Sem2/OS/Contents (master)
$ bash shape.sh
    xx
    xx
xxxxxxxxxx
    xx
    xx
```

Concepts Covered – Pattern Creation, Loops(Control Structures), Functions , Conditional Statements

3. Finding Unique Elements From Given Array/ Removing Duplicate Elements From Array

```
#!bin/bash
myArray=($1 $2 $3 $4 $5 $6 $7 $8)
for element in "${myArray[@]}"; do
  if [[ ! " ${uniqueArray[@]} " =~ "$element" ]]; then
    uniqueArray+=("$element")
  fi
done

echo "original Array : ${myArray[@]}"
echo "Unique Array : ${uniqueArray[@]}"
```

```
Admin@DESKTOP-8R2MHT8 MINGW64 /d/MY USERS/Aditya/ENGINEERING/Sem2/OS/Contents (master)
$ bash unique_array.sh 12 43 23 32 23 87 23 88 98 88
original Array : 12 43 23 32 23 87 23 88
Unique Array : 12 43 23 32 87 88
```


Concepts Covered – Command Line Arguments , Arrays ,Strings (Dynamic Strings),Conditional Statements , Control Structures

4. Shell Script To Manipulate Strings

```bash
#!/bin/bash

reverseString() {
  read -p "Enter a string: " inputString

  reversedString=""
  length=${#inputString}

  for ((i = length - 1; i >= 0; i--)); do
    reversedString="${reversedString}${inputString:$i:1}"
  done

  echo "Original String: $inputString"
  echo "Reversed String: $reversedString"
}

reverseString
```

```
Admin@DESKTOP-8R2MHT8 MINGW64 /d/MY USERS/Aditya/ENGINEERING/Sem2/OS/Contents (master)
$ bash reverseString.sh
Enter a string: Linux OS
Original String: Linux OS
Reversed String: SO xuniL
```

Concepts Covered – String Operation, Control Structures ,Functions

5. Handling File Operations

```
aditya@Ubantu:~$ touch lab.sh
aditya@Ubantu:~$ vi lab.sh
aditya@Ubantu:~$ sh lab.sh
This Is
Linux
OS
aditya@Ubantu:~$
```

```
echo "This Is"
echo "Linux"
echo "OS"
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
:wq
```

Concepts Covered – File Creation And handling Using Vi Editor