R VRSHA SOLACHI

MODULE 5- BASH TRAINING

Advance topics in a function

1) Write a function add to add two numbers and call the function in another file.

```
user@user-VirtualBox:~$ gedit funadd.sh funcalladd.sh &
[1] 18280
user@user-VirtualBox:~$ +x chmod funcalladd.sh
+x: command not found
user@user-VirtualBox:~$ chmod +x  funcalladd.sh
user@user-VirtualBox:~$ ./funcalladd.sh
BEGINNING OF THE PROGRAM
SUM of 1 and 2 is 3
END OF THE PROGRAM
user@user-VirtualBox:~$
```

funadd.sh

```
1 #!/usr/bin/env bash
2 add(){
3  sum=$(( $1 + $2 ))
4  echo "SUM of $1 and $2 is $sum"
5 }
```

funcalladd.sh

```
1 #!/usr/bin/env bash
2
3 source funadd.sh
4 echo "BEGINNING OF THE PROGRAM"
5 add 1 2
6 echo "END OF THE PROGRAM"
```

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Recursive function

1) Write a program where the recursive function calculates the sum of N numbers

```
user@user-VirtualBox:~$ ./rescursive.sh
Enter the element : 5

Sum of the numbers from 1 to 5 is 15
user@user-VirtualBox:~$
```

```
1 #!/usr/bin/env bash
2
3 sum() {
4   local temp=$1
5   if [[ $temp -eq 1 ]]; then
6     echo 1
7   else
8     local s=$((temp - 1))
9     s=$(sum $s)
10    s=$((s + temp))
11    echo $s
12  fi
13 }
14
15 read -p "Enter the element : " n
16 s=$(sum $n)
17 echo -e "\nSum of the numbers from 1 to $n is $s"
18
```

Basics of Redirection (error handling)

1) Write a program in any language like C, C++, Java.
And redirect the output or error to a new file.

```
user@user-VirtualBox:~$ ./helloworld.c
user@user-VirtualBox:~$ gedit redirection.sh
user@user-VirtualBox:~$ ./redirection.sh
user@user-VirtualBox:~$ gedit error.txt
user@user-VirtualBox:~$
```

helloworld.c

```
1 #include <stdio.h>
2 int main() {
3     printf("Hello world!\n");
4     return 0;
5 }
```

Open

error.txt
~/

```
1 ./redirection.sh: line 3: /usr/home/helloworld.c: No such file or directory
```

redirection.sh

```
1 #!/usr/bin/env bash
2
3 /usr/home/helloworld.c 2> error.txt
```

Name: ~/redirection.sh
MIME Type: shell script (application/x-shellscript)
Encoding: Unicode (UTF-8)

2) Create a text file with some content like your name, address.
Redirect the content to a new file.

```
user@user-VirtualBox:~$ gedit info.txt &
[1] 19616
user@user-VirtualBox:~$ chmod +x info.txt
[1]+  Done                    gedit info.txt
user@user-VirtualBox:~$ gedit redir.sh
user@user-VirtualBox:~$ cat info.txt
NAME : ABCD
ADDRESS : 123 Main Street
Chennai
India
PHONE :+91 8825885957
user@user-VirtualBox:~$ chmod +x redir.sh
user@user-VirtualBox:~$ ./redir.sh
ADDRESS : 123 Main Street
Chennai
India
NAME : ABCD
PHONE :+91 8825885957
user@user-VirtualBox:~$
```

info.txt

```
1 NAME : ABCD
2 ADDRESS : 123 Main Street
3 Chennai
4 India
5 PHONE :+91 8825885957
```

info.txt

```
1 sort < info.txt
```

More on Redirection

1) Create X_file.txt file with some content.

```
user@user-VirtualBox:~$ echo "Hello World,Welcome to bash learning" > X_file.txt
user@user-VirtualBox:~$ cat X_file.txt
Hello World,Welcome to bash learning
user@user-VirtualBox:~$ date > out_file.txt
user@user-VirtualBox:~$ cat out_file.txt
Thursday 12 October 2023 04:06:20 PM IST
```

2) Redirect the content of both out_file.txt and X_file.txt to a new file

```
user@user-VirtualBox:~$ ./redirr.sh
user@user-VirtualBox:~$ cat Newfile.txt
Hello World ! Welcome to bash learning
ls: cannot access '/user': No such file or directory
/usr:
bin
games
include
lib
lib32
lib64
libexec
libx32
local
sbin
share
src
Thursday 12 October 2023 04:17:49 PM IST
```

```
1 #!/usr/bin/env bash
2 echo "Hello World ! Welcome to bash learning" &> X_file.txt
3 ls /usr /user &> out_file.txt
4 date >> out_file.txt
5 cat X_file.txt out_file.txt > Newfile.txt
```

Here document and Here string

1) Convert a string to uppercase using:
   a) Here document
   b) Here string

```
user@user-VirtualBox:~$ gedit here.sh &
[1] 26854
user@user-VirtualBox:~$ chmod +x here.sh
```

```
user@user-VirtualBox:~$ ./here.sh
WELCOME TO BASH LEARNING. THIS IS DONE USING HERE DOCUMENT.
WELCOME TO BASH LEARNING. THIS IS DONE USING HERE STRING.
```

```
#!/usr/bin/env bash
tr a-z A-Z << HERE
Welcome to Bash learning. This is done using HERE document.
HERE

tr a-z A-Z <<< 'Welcome to Bash learning. This is done using HERE string.'
```