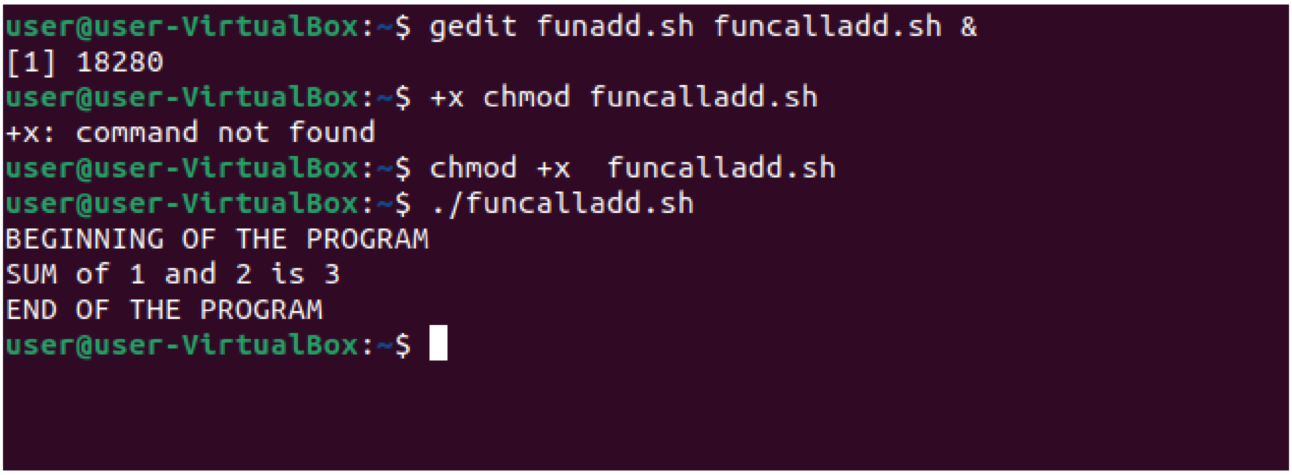
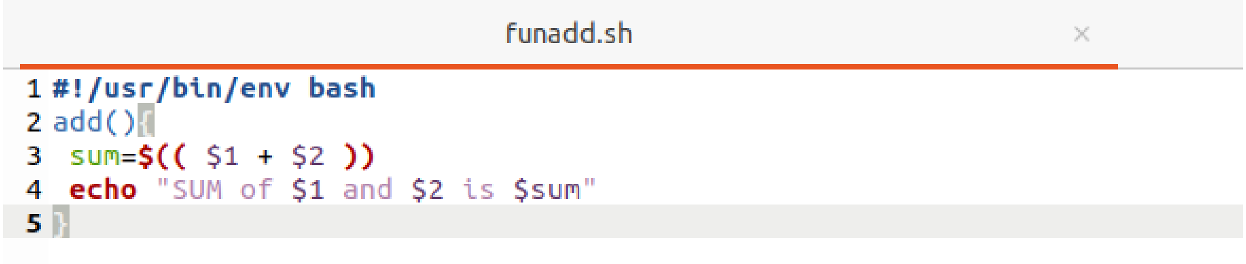
MODULE 5- BASH TRAINING

Advance topics in a function

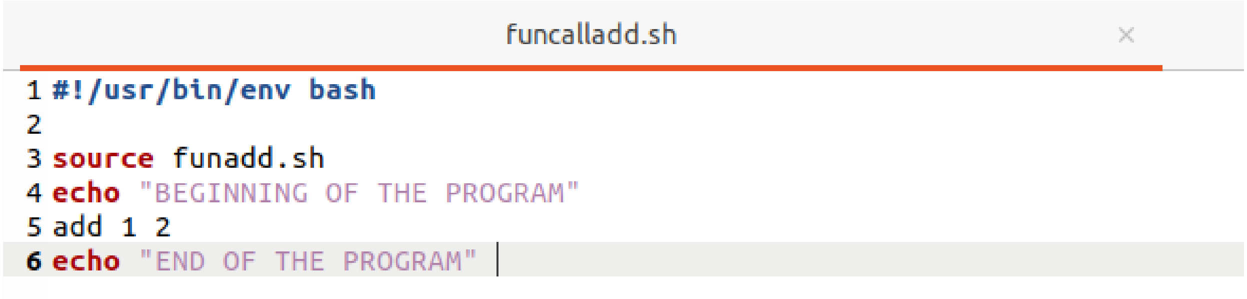
1) Write a function add to add two numbers and call the function in another file.



```
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:~$
```



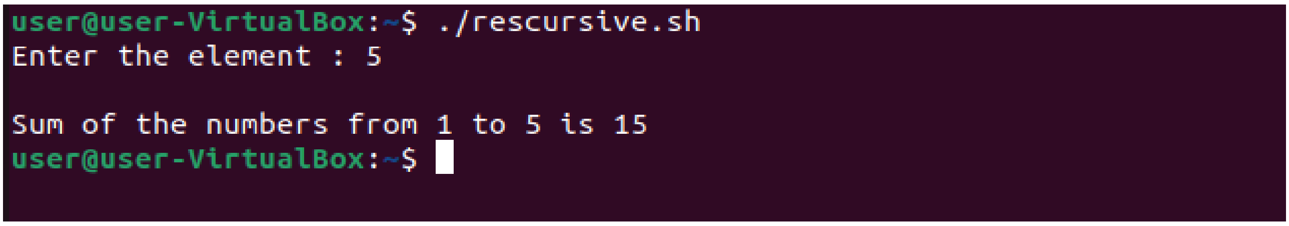
```
#!/usr/bin/env bash
add(){
 sum=$(( $1 + $2 ))
 echo "SUM of $1 and $2 is $sum"
}
```



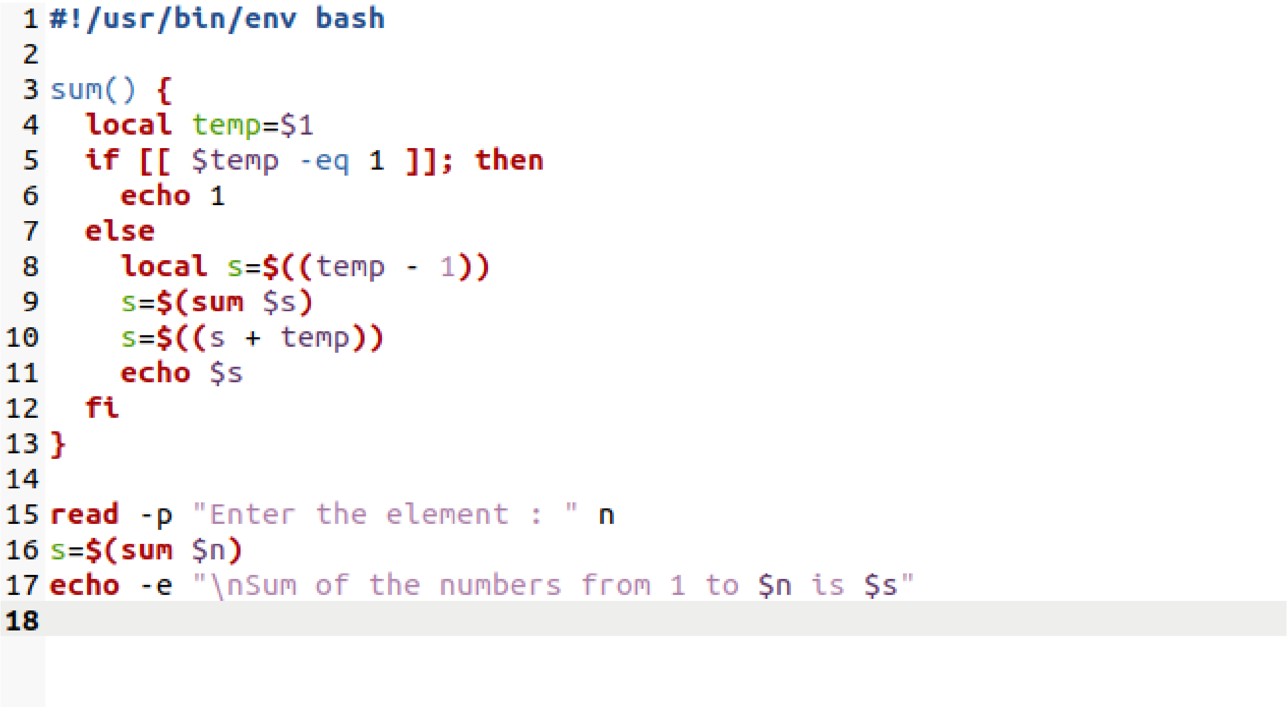
```
#!/usr/bin/env bash

source funadd.sh
echo "BEGINNING OF THE PROGRAM"
add 1 2
echo "END OF THE PROGRAM"
```

Recursive function

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



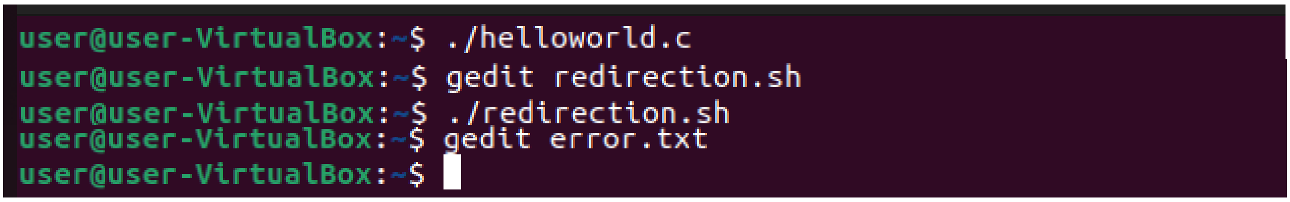
```
user@user-VirtualBox:~$ ./rescursive.sh
Enter the element : 5

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



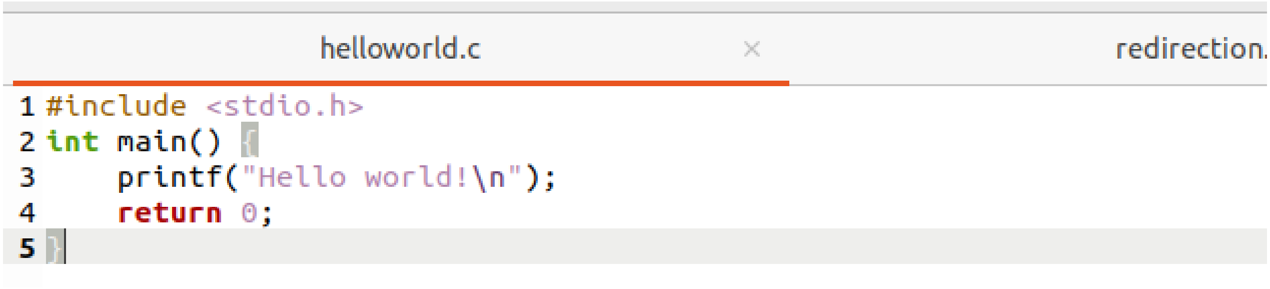
```
#!/usr/bin/env bash

sum() {
  local temp=$1
  if [[ $temp -eq 1 ]]; then
    echo 1
  else
    local s=$((temp - 1))
    s=$(sum $s)
    s=$((s + temp))
    echo $s
  fi
}

read -p "Enter the element : " n
s=$(sum $n)
echo -e "\nSum of the numbers from 1 to $n is $s"

```

Basics of Redirection (error handling)

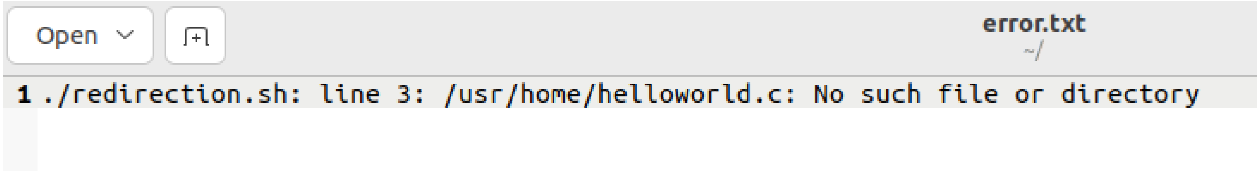
1) Write a program in any language like C, C++, Java.
And redirect the output or error to a new file.



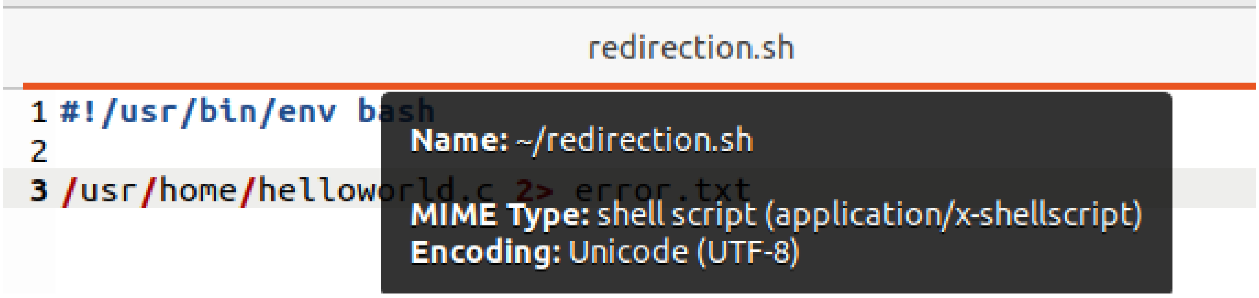
```
user@user-VirtualBox:~$ ./helloworld.c
user@user-VirtualBox:~$ gedit redirection.sh
user@user-VirtualBox:~$ ./redirection.sh
user@user-VirtualBox:~$ gedit error.txt
user@user-VirtualBox:~$ 
```



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



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

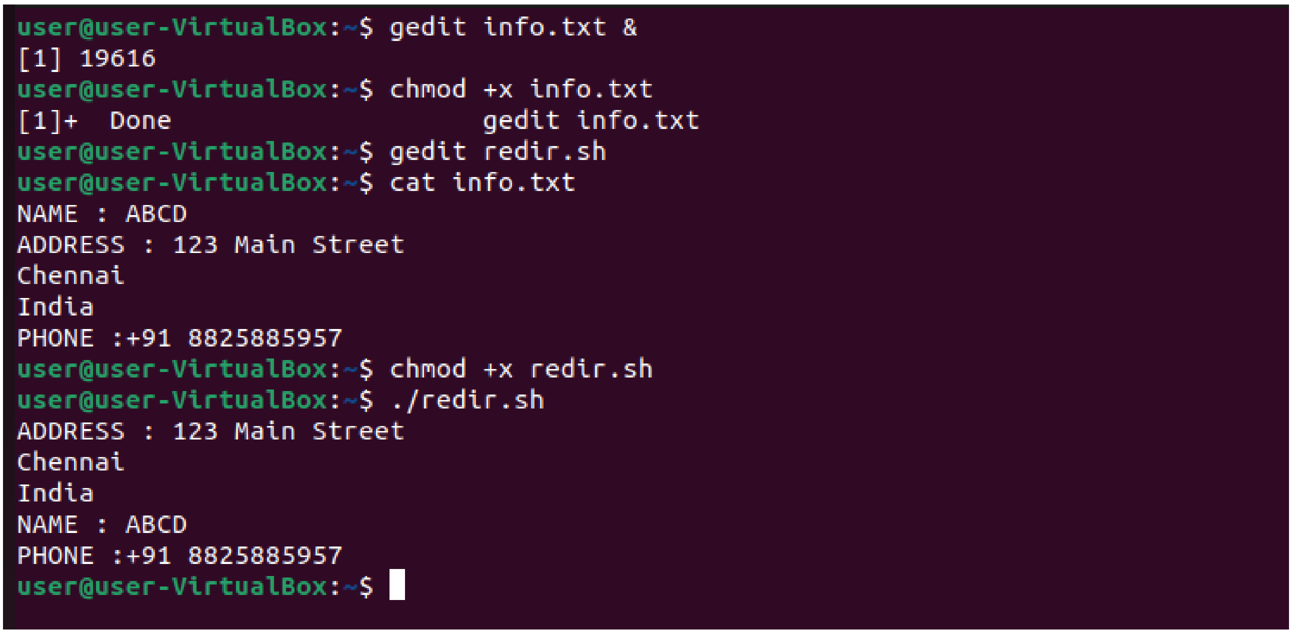


```bash
#!/usr/bin/env bash

/usr/home/helloworld.c 2> error.txt
```

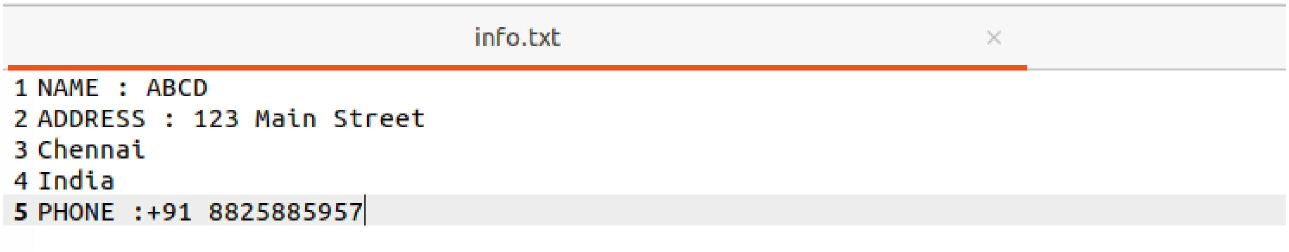
Name: ~/redirection.sh

MIME Type: shell script (application/x-shellscript)
Encoding: Unicode (UTF-8)

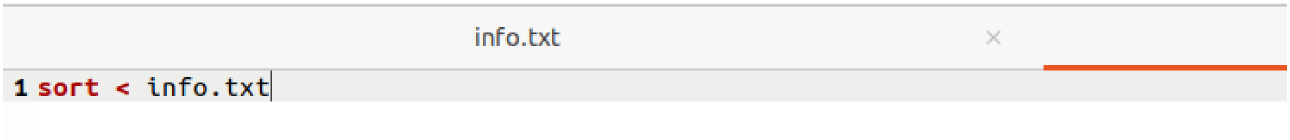
2) Create a text file with some content like your name, address.
Redirect the content to a new file.



```
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:~$ 
```



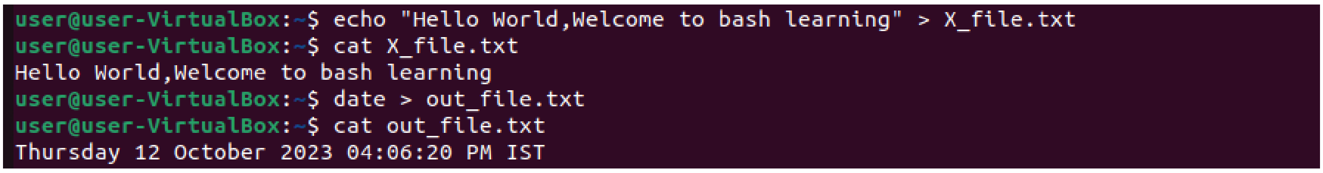
```
NAME : ABCD
ADDRESS : 123 Main Street
Chennai
India
PHONE :+91 8825885957
```



```
sort < info.txt
```

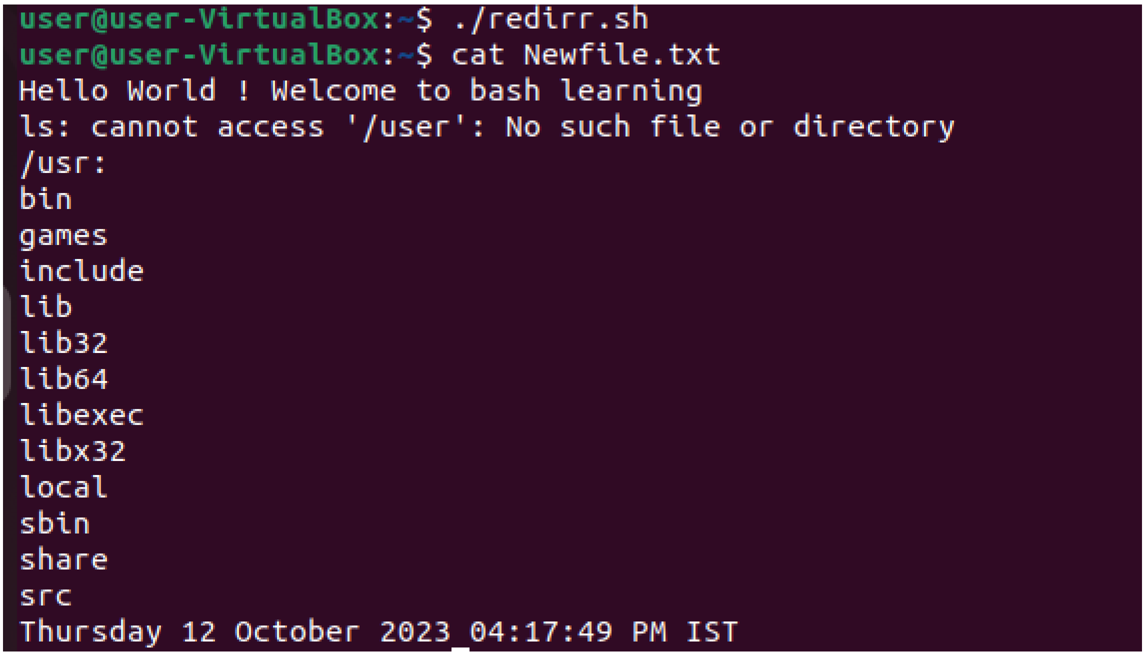
More on Redirection

1) Create X_file.txt file with some content.

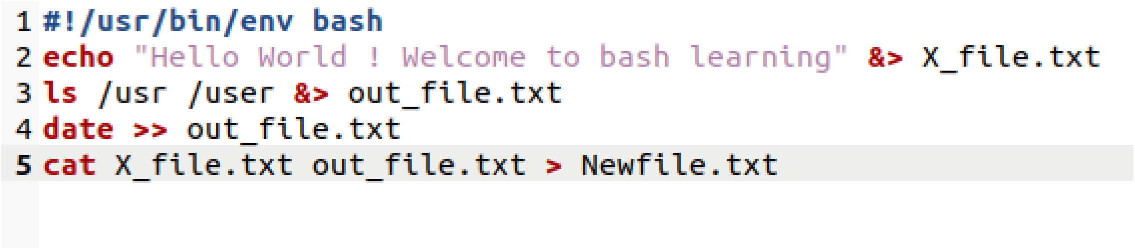


```
user@user-VirtualBox:~$ echo "Hello World,Welcome to bash learning" > X_file.txt
user@user-VirtualBox:~$ cat X_file.txt
Hello World,Welcome to bash learning
user@user-VirtualBox:~$ date > out_file.txt
user@user-VirtualBox:~$ cat out_file.txt
Thursday 12 October 2023 04:06:20 PM IST
```

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



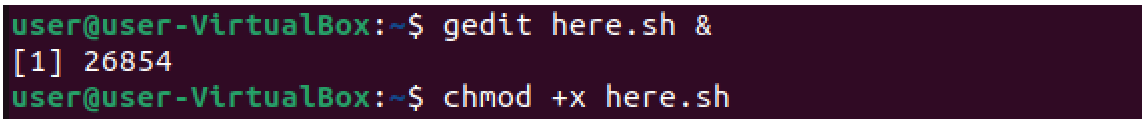
```
user@user-VirtualBox:~$ ./redirr.sh
user@user-VirtualBox:~$ cat Newfile.txt
Hello World ! Welcome to bash learning
ls: cannot access '/user': No such file or directory
/usr:
bin
games
include
lib
lib32
lib64
libexec
libx32
local
sbin
share
src
Thursday 12 October 2023 04:17:49 PM IST
```



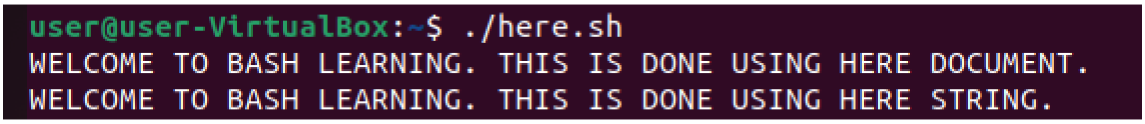
```
#!/usr/bin/env bash
echo "Hello World ! Welcome to bash learning" &> X_file.txt
ls /usr /user &> out_file.txt
date >> out_file.txt
cat X_file.txt out_file.txt > Newfile.txt
```

Here document and Here string

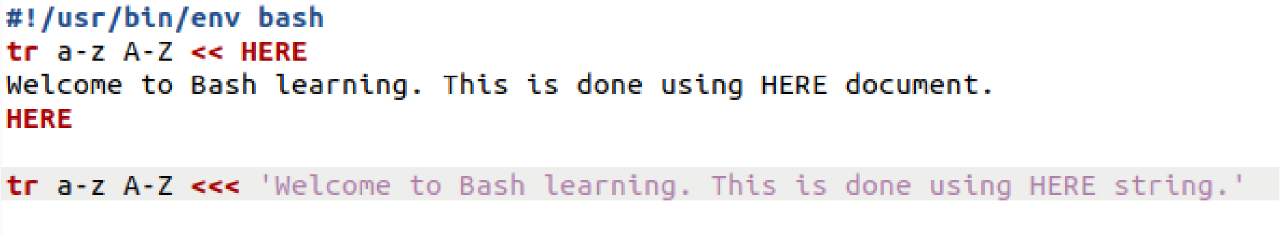
1) Convert a string to uppercase using:
    a) Here document
    b) Here string



```
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.
```



```bash
#!/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.'
```