

Name: Hemal Bagwe  
Prn no: 220960920009

## LAB EXAM

### Concepts of Programming & Operating System

Total Marks: 10 Time: 1 hour

1. Write a program to print a pattern like right angle triangle with numbers which will repeat a number in a row.

The pattern is as follows :

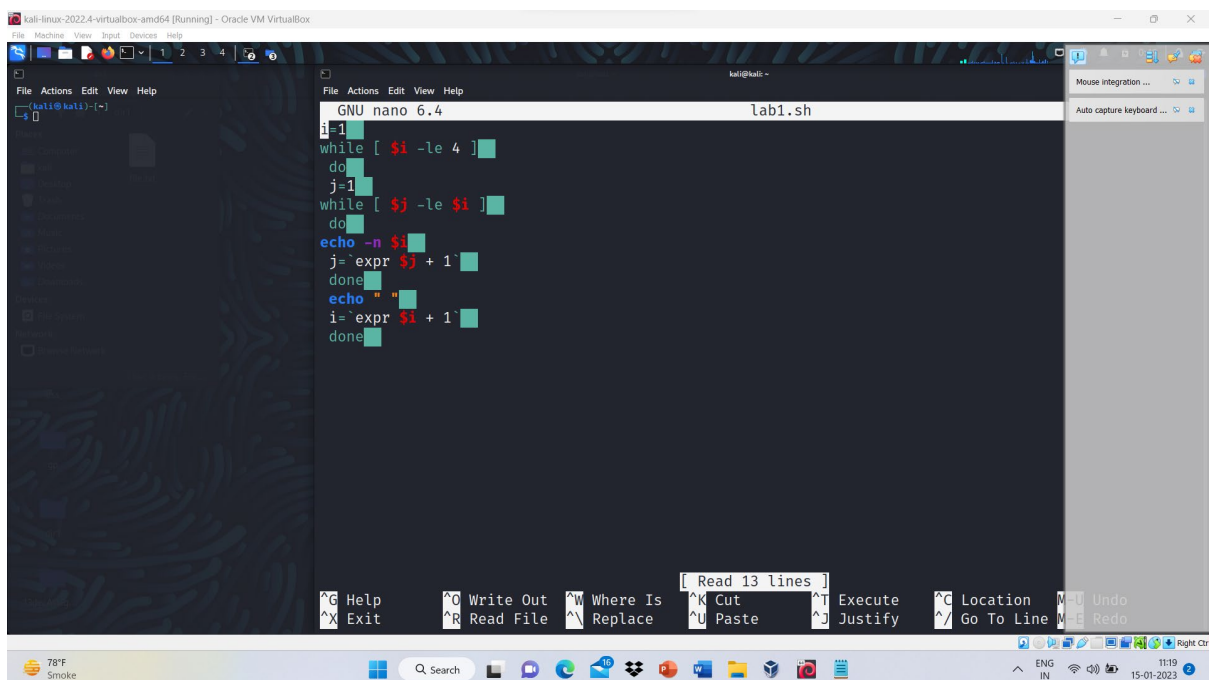
1

22

333

4444

```
(kali㉿kali)-[~]  
$ nano lab1.sh  
  
(kali㉿kali)-[~]  
$ chmod a+x lab1.sh
```



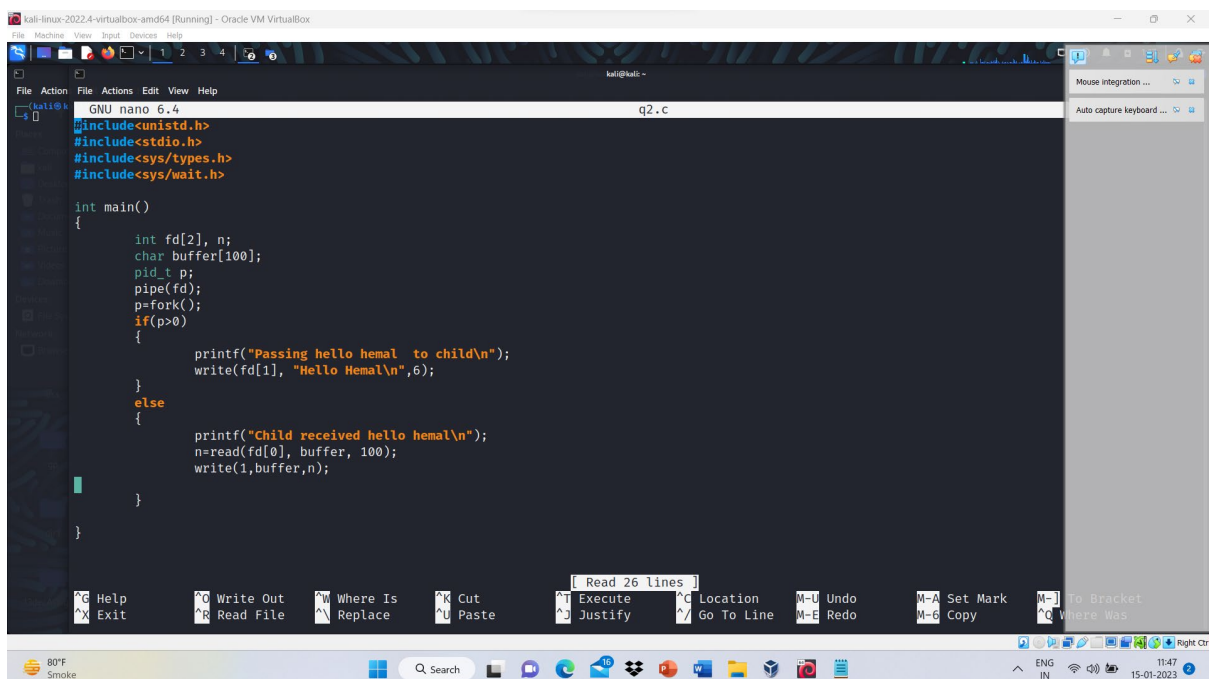
```
kali@kali:~$ ./lab1.sh  
1  
22  
333  
4444
```

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```
(kali㉿kali)-[~]  
$ nano lab1.sh  
  
(kali㉿kali)-[~]  
$ ./lab1.sh  
1  
22  
333  
4444
```

**2. Write a C Program to create two processes where child process sends message to parent. Implement it using pipe system call. pipe ().**

```
(kali㉿kali)-[~]  
$ nano q2.c  
  
(kali㉿kali)-[~]  
$ gcc q2.c -o q2  
  
(kali㉿kali)-[~]  
$ ./q2  
Passing value to child  
Child received data  
  
(kali㉿kali)-[~]  
$
```



```
GNU nano 6.4 q2.c  
#include<unistd.h>  
#include<stdio.h>  
#include<sys/types.h>  
#include<sys/wait.h>  
  
int main()  
{  
    int fd[2], n;  
    char buffer[100];  
    pid_t p;  
    pipe(fd);  
    p=fork();  
    if(p>0)  
    {  
        printf("Passing hello hemal to child\n");  
        write(fd[1], "Hello Hemal\n",6);  
    }  
    else  
    {  
        printf("Child received hello hemal\n");  
        n=read(fd[0], buffer, 100);  
        write(1,buffer,n);  
    }  
}
```