

CSE2005 - Operating Systems

LAB ASSIGNMENT-2

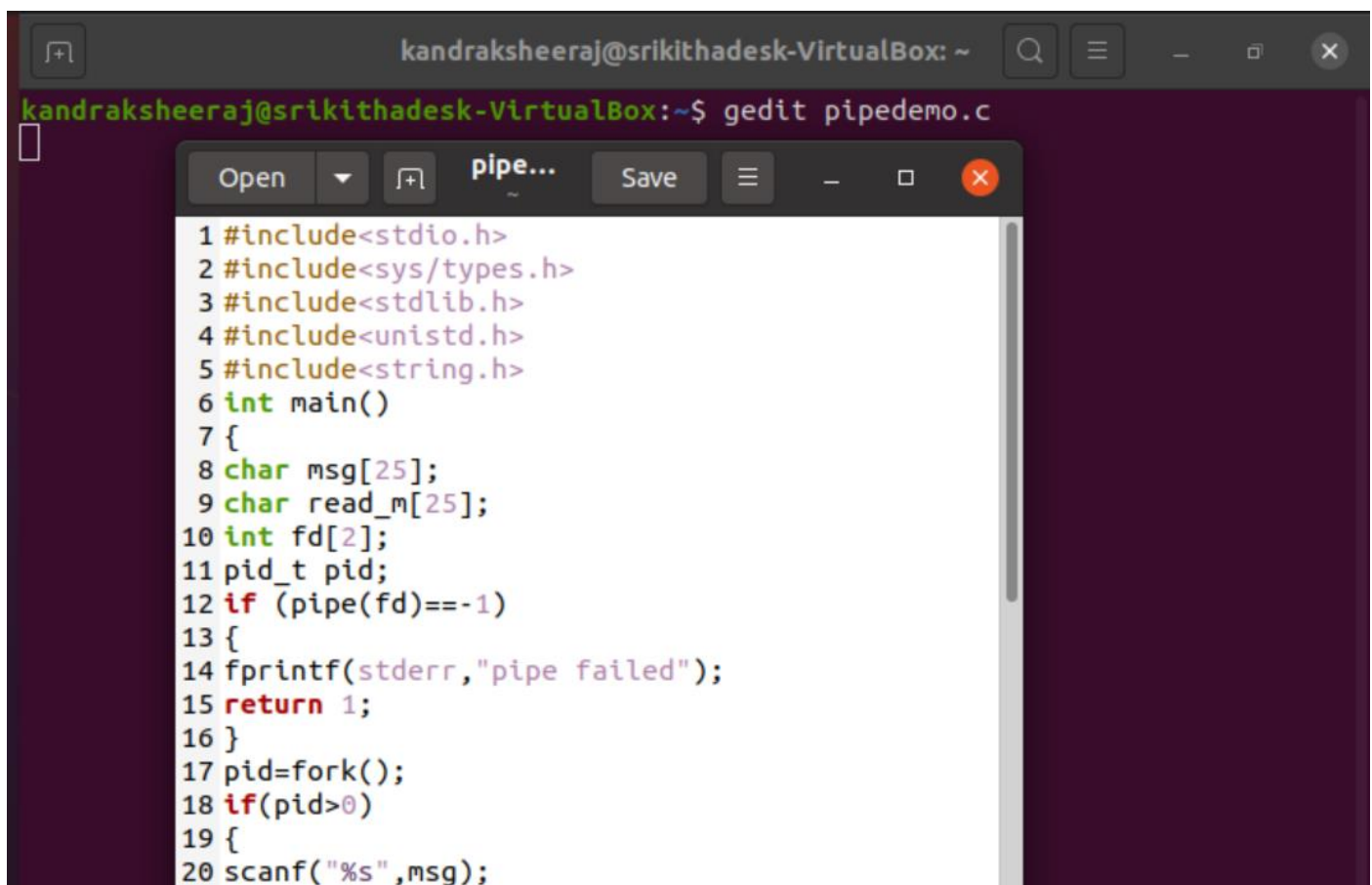
Slot: L35 + L36

Faculty: GERALDINE BESSIE AMALI D MAM

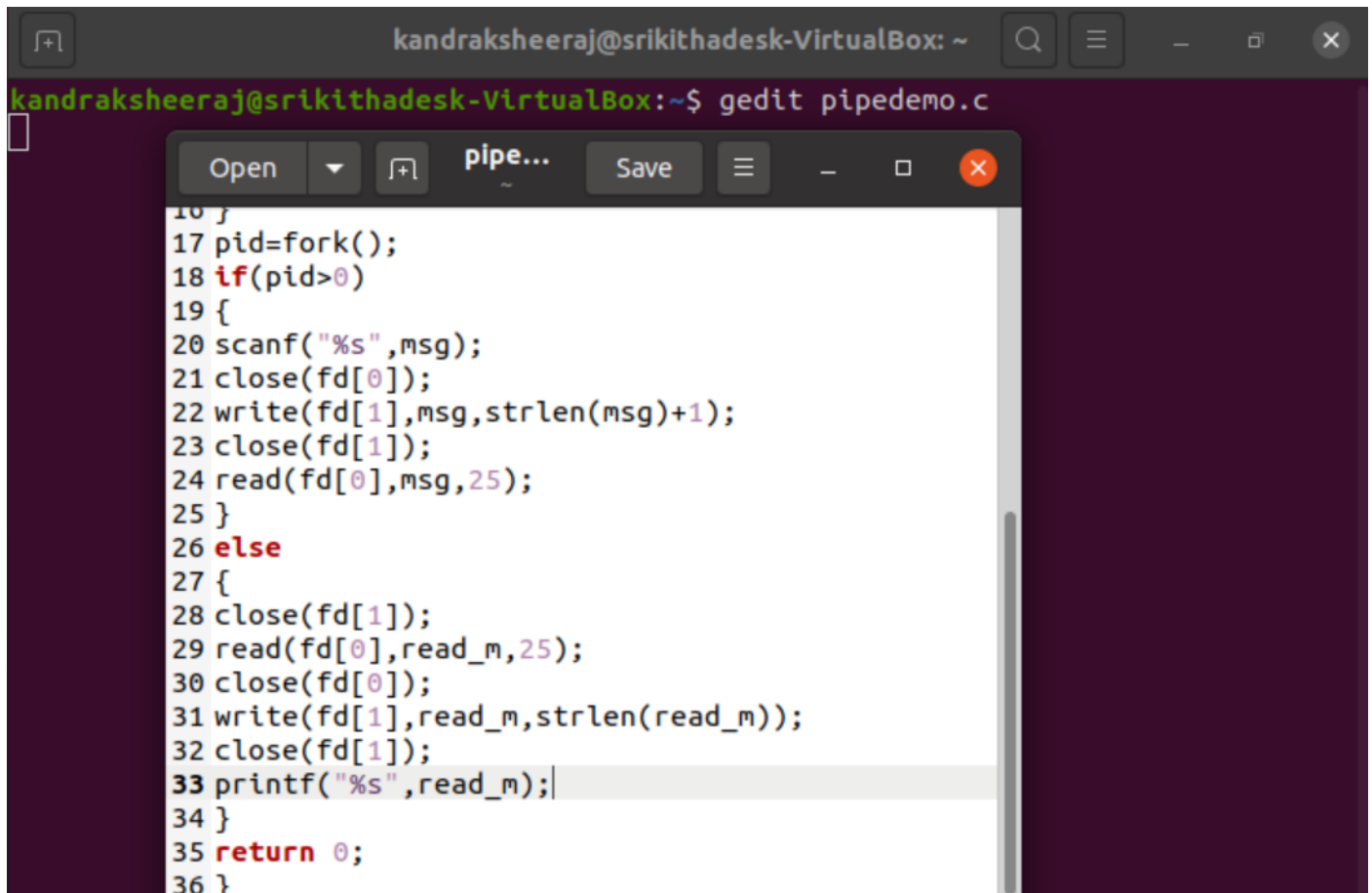
Date: 31-08-2020

19BCE0829 KSHEERAJ KANDRA

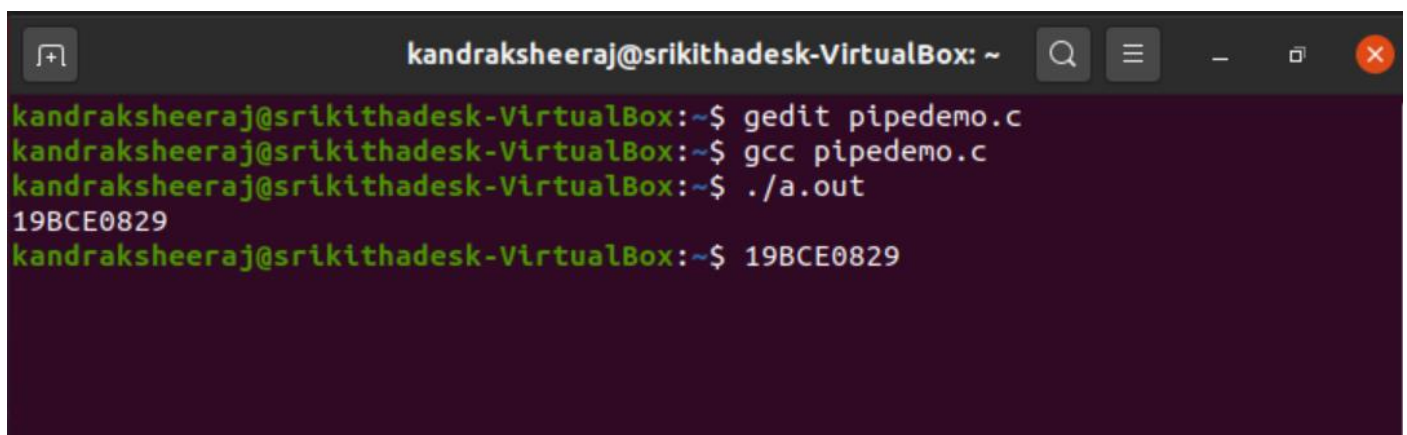
1. Working of Pipes



```
kandraksheeraj@srikithadesk-VirtualBox: ~  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit pipedemo.c  
[+] pipe... Save  
1 #include<stdio.h>  
2 #include<sys/types.h>  
3 #include<stdlib.h>  
4 #include<unistd.h>  
5 #include<string.h>  
6 int main()  
7 {  
8     char msg[25];  
9     char read_m[25];  
10    int fd[2];  
11    pid_t pid;  
12    if (pipe(fd)==-1)  
13    {  
14        fprintf(stderr,"pipe failed");  
15        return 1;  
16    }  
17    pid=fork();  
18    if(pid>0)  
19    {  
20        scanf("%s",msg);
```

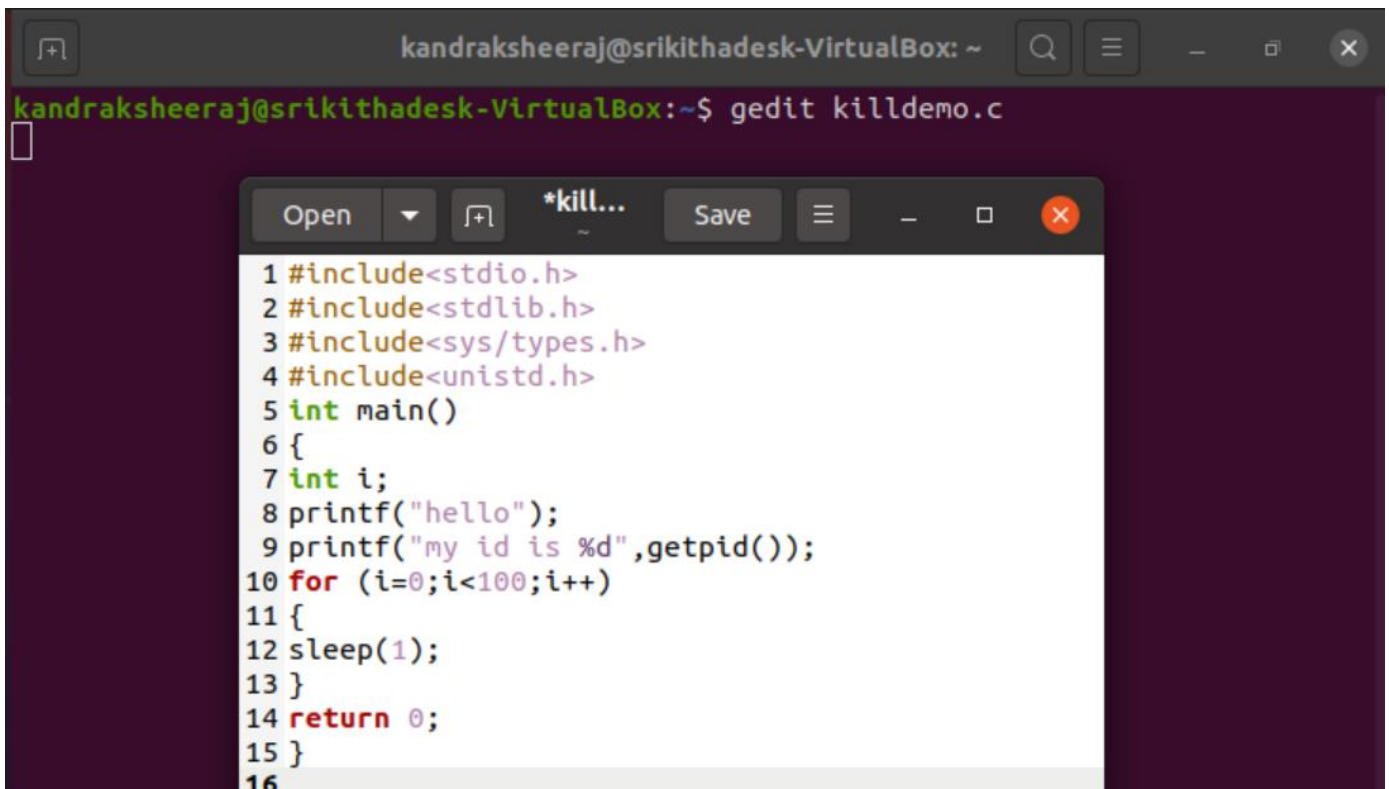


```
kandraksheeraj@srikithadesk-VirtualBox: ~  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit pipedemo.c  
10 }  
17 pid=fork();  
18 if(pid>0)  
19 {  
20 scanf("%s",msg);  
21 close(fd[0]);  
22 write(fd[1],msg,strlen(msg)+1);  
23 close(fd[1]);  
24 read(fd[0],msg,25);  
25 }  
26 else  
27 {  
28 close(fd[1]);  
29 read(fd[0],read_m,25);  
30 close(fd[0]);  
31 write(fd[1],read_m,strlen(read_m));  
32 close(fd[1]);  
33 printf("%s",read_m);  
34 }  
35 return 0;  
36 }
```

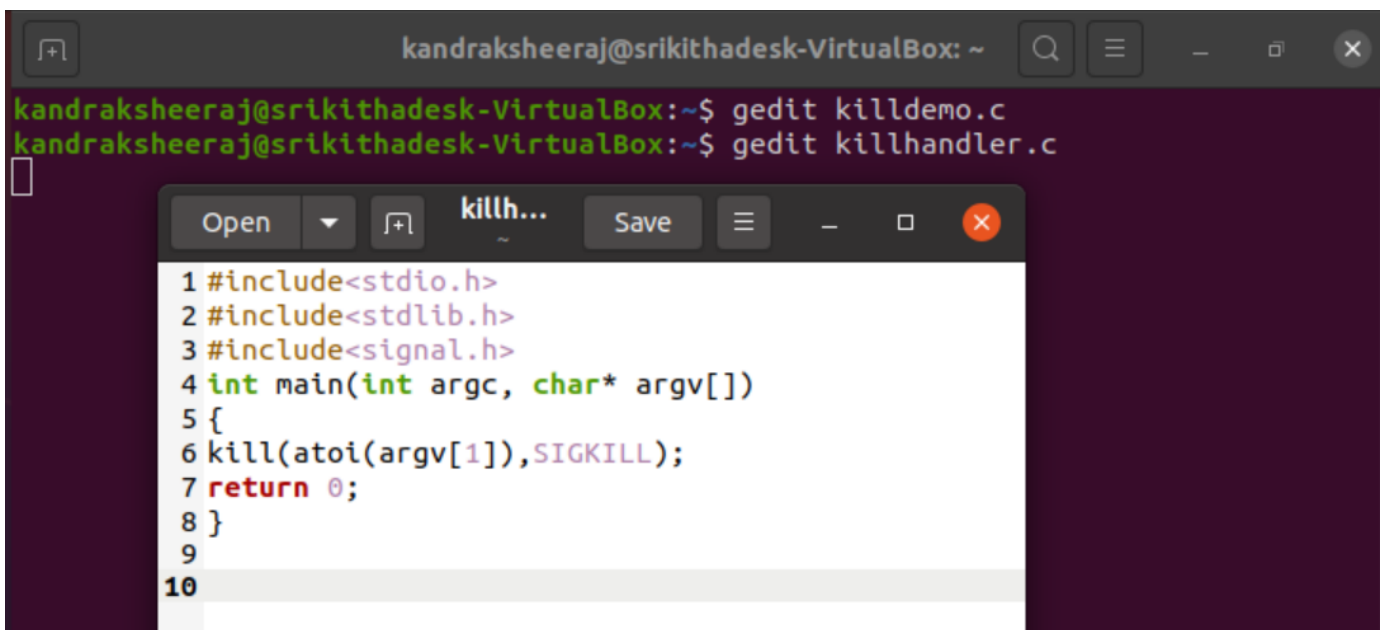


```
kandraksheeraj@srikithadesk-VirtualBox: ~  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit pipedemo.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ gcc pipedemo.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ ./a.out  
19BCE0829  
kandraksheeraj@srikithadesk-VirtualBox:~$ 19BCE0829
```

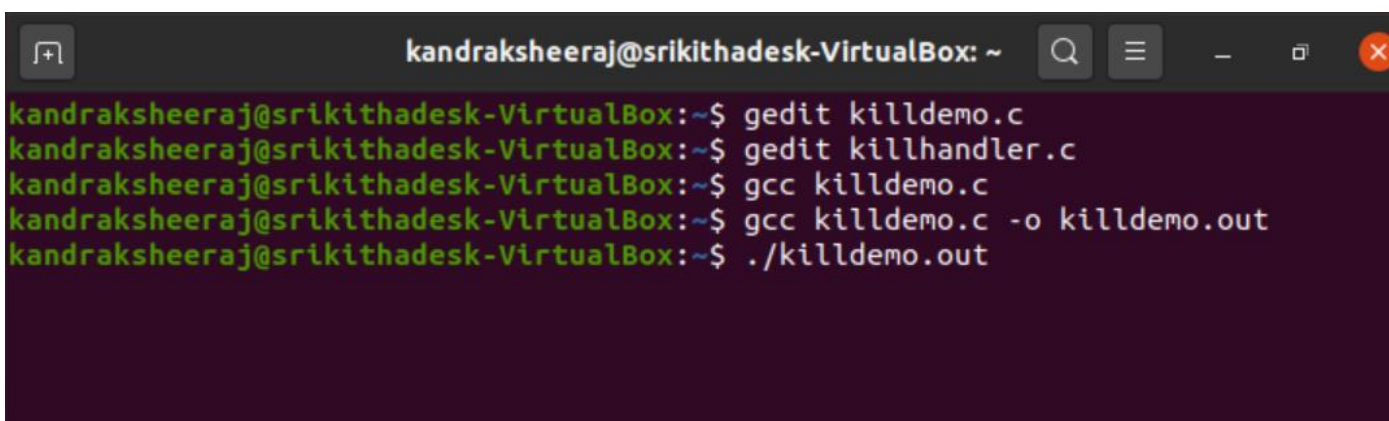
2. Kill a process



```
kandraksheeraj@srikithadesk-VirtualBox: ~  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit killdemo.c  
1 #include<stdio.h>  
2 #include<stdlib.h>  
3 #include<sys/types.h>  
4 #include<unistd.h>  
5 int main()  
6 {  
7     int i;  
8     printf("hello");  
9     printf("my id is %d",getpid());  
10    for (i=0;i<100;i++)  
11    {  
12        sleep(1);  
13    }  
14    return 0;  
15 }  
16
```



```
kandraksheeraj@srikithadesk-VirtualBox: ~  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit killdemo.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit killhandler.c  
1 #include<stdio.h>  
2 #include<stdlib.h>  
3 #include<signal.h>  
4 int main(int argc, char* argv[])  
5 {  
6     kill(atoi(argv[1]),SIGKILL);  
7     return 0;  
8 }  
9  
10
```

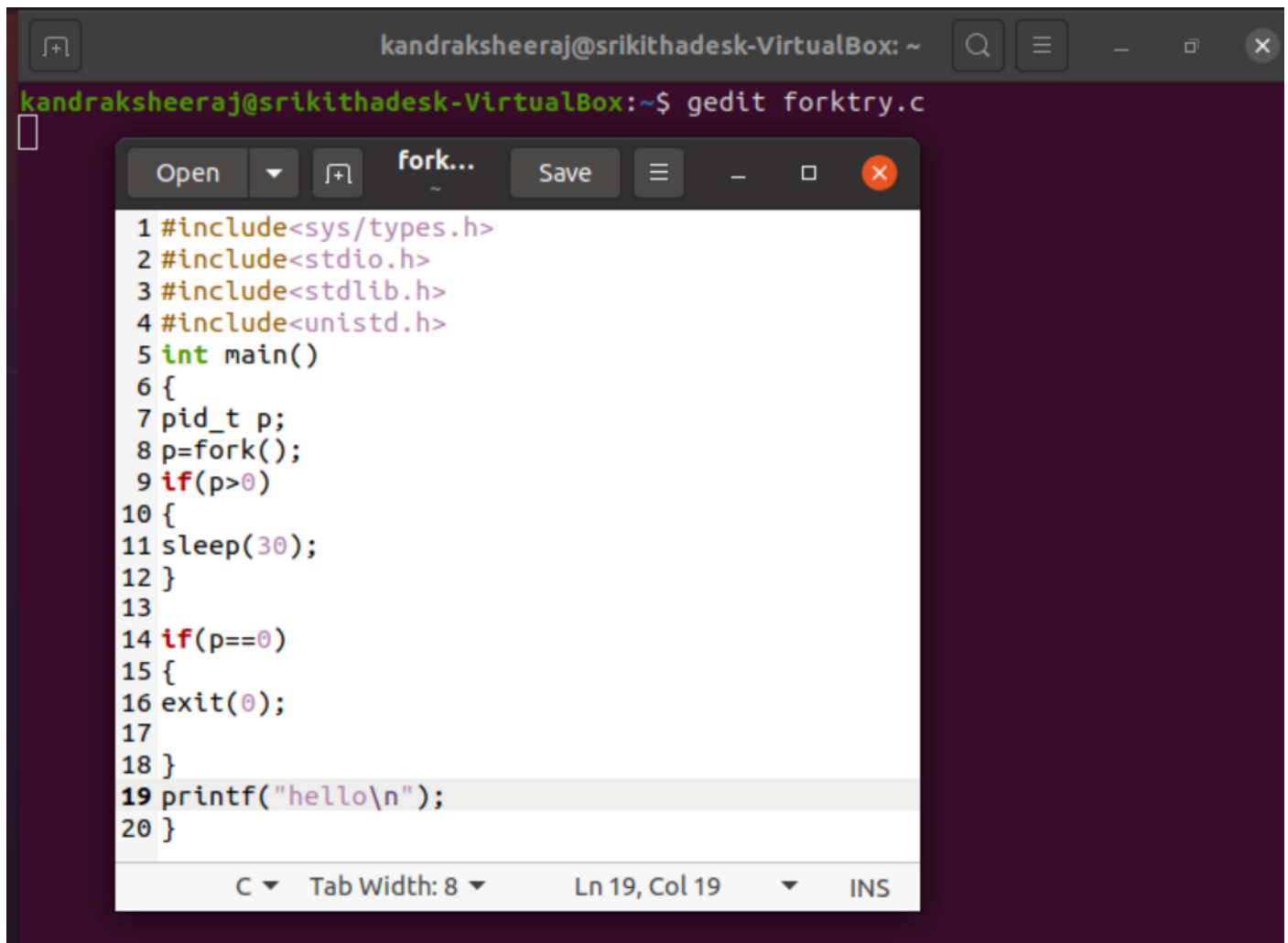


```
kandraksheeraj@srikithadesk-VirtualBox: ~  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit killdemo.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit killhandler.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ gcc killdemo.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ gcc killdemo.c -o killdemo.out  
kandraksheeraj@srikithadesk-VirtualBox:~$ ./killdemo.out
```

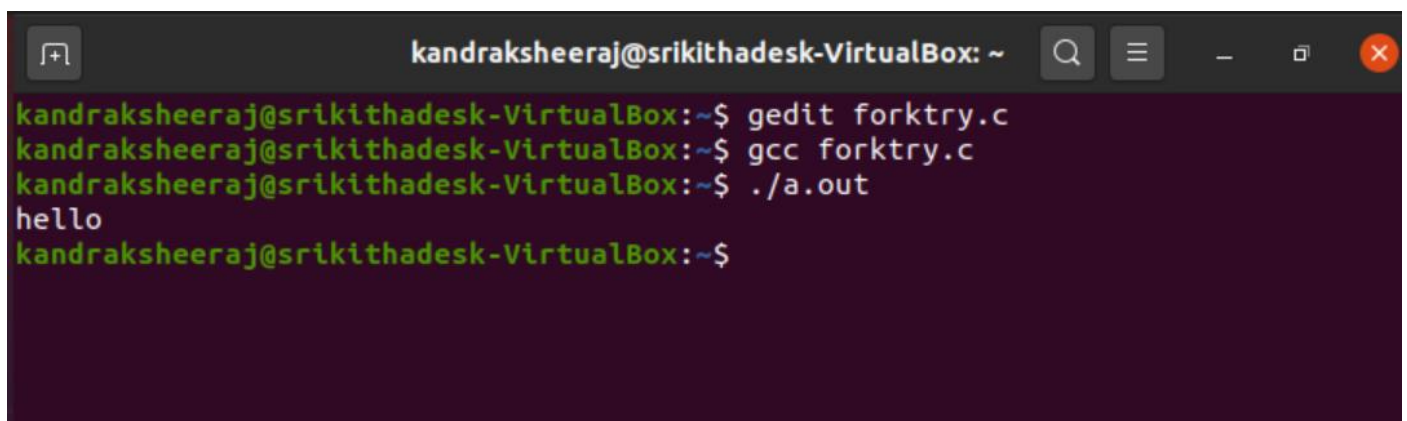
```
kandraksheeraj@srikithadesk-VirtualBox: ~  
kandraksheeraj@srikithadesk-VirtualBox:~$ ps -au  
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND  
kandrak+  1317  0.0  0.3 172628  6556 tty2      Ssl+  18:23   0:00 /usr/lib/gdm  
kandrak+  1323  1.0  3.3 237032  67996 tty2      Sl+   18:23   0:27 /usr/lib/xor  
kandrak+  1365  0.0  0.6 197024 14088 tty2      Sl+   18:23   0:00 /usr/libexec  
kandrak+  1944  0.0  0.2  19240  4904 pts/0     Ss    18:24   0:00 bash  
kandrak+  2655  0.0  0.2  19240  4944 pts/1     Ss    18:59   0:00 bash  
kandrak+  2734  0.0  0.0   2488   584 pts/0     S+    19:06   0:00 ./killdemo.o  
kandrak+  2741  0.0  0.1  20108  3304 pts/1     R+    19:06   0:00 ps -au  
kandraksheeraj@srikithadesk-VirtualBox:~$ gcc killhandler.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ ./a.out 2734  
kandraksheeraj@srikithadesk-VirtualBox:~$
```

```
kandraksheeraj@srikithadesk-VirtualBox: ~  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit killdemo.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit killhandler.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ gcc killdemo.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ gcc killdemo.c -o killdemo.out  
kandraksheeraj@srikithadesk-VirtualBox:~$ ./killdemo.out  
Killed  
kandraksheeraj@srikithadesk-VirtualBox:~$
```

3. Zombie process



```
kandraksheeraj@srikithadesk-VirtualBox: ~  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit forktry.c  
1 #include<sys/types.h>  
2 #include<stdio.h>  
3 #include<stdlib.h>  
4 #include<unistd.h>  
5 int main()  
6 {  
7     pid_t p;  
8     p=fork();  
9     if(p>0)  
10 {  
11     sleep(30);  
12 }  
13  
14 if(p==0)  
15 {  
16     exit(0);  
17 }  
18 }  
19 printf("hello\n");  
20 }
```



```
kandraksheeraj@srikithadesk-VirtualBox: ~  
kandraksheeraj@srikithadesk-VirtualBox:~$ gedit forktry.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ gcc forktry.c  
kandraksheeraj@srikithadesk-VirtualBox:~$ ./a.out  
hello  
kandraksheeraj@srikithadesk-VirtualBox:~$
```



```

kandraksheeraj@srikithadesk-VirtualBox: ~
kandraksheeraj@srikithadesk-VirtualBox:~$ ps -l
F S   UID        PID      PPID    C  PRI   NI     ADDR  SZ  WCHAN  TTY          TIME CMD
0 S   1001        2941      1931    0   80    0      -    4810 do_wai pts/2        00:00:00 bash
0 R   1001        2953      2941    0   80    0      -    5007 -      pts/2        00:00:00 ps
kandraksheeraj@srikithadesk-VirtualBox:~$ ps -au
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
kandrak+     1317  0.0  0.3 172628  6556 tty2      Ss+   00:34    0:00 /usr/lib/gdm
kandrak+     1323  1.0  3.5 242292  73148 tty2      Sl+   00:34    0:33 /usr/lib/xor
kandrak+     1365  0.0  0.6 197024 14088 tty2      Sl+   00:34    0:00 /usr/libexec
kandrak+     1944  0.0  0.2  19240  4912 pts/0     Ss    00:35    0:00 bash
kandrak+     2655  0.0  0.2  19240  4944 pts/1     Ss+   01:10    0:00 bash
kandrak+     2929  0.0  0.0   2356   516 pts/0     S+    01:26    0:00 ./a.out
kandrak+     2930  0.0  0.0     0      0 pts/0     Z+    01:26    0:00 [a.out] <def
kandrak+     2941  0.4  0.2  19240  4844 pts/2     Ss    01:26    0:00 bash
kandrak+     2956  0.0  0.1  20108  3264 pts/2     R+    01:26    0:00 ps -au
kandraksheeraj@srikithadesk-VirtualBox:~$

```

```

kandraksheeraj@srikithadesk-VirtualBox: ~
kandrak+     1650  0.0  0.5 256712 11220 ?        Ssl   00:34    0:00 /usr/libexec
kandrak+     1651  0.0  0.2  465720  5944 ?        Ssl   00:34    0:00 /usr/libexec
kandrak+     1654  0.0  0.2  244132  6028 ?        Ssl   00:34    0:00 /usr/libexec
kandrak+     1656  0.0  0.4  473264  9860 ?        Ssl   00:34    0:00 /usr/libexec
kandrak+     1658  0.0  0.4  323640  8436 ?        Ssl   00:34    0:00 /usr/libexec
kandrak+     1660  0.0  0.4  327860  8984 ?        Ssl   00:34    0:00 /usr/libexec
kandrak+     1663  0.0  0.3  467304  7104 ?        Ssl   00:34    0:00 /usr/libexec
kandrak+     1669  0.0  1.3 353952 28124 ?        Ssl   00:34    0:00 /usr/libexec
kandrak+     1673  0.0  0.2  231792  5692 ?        Sl    00:34    0:00 /usr/libexec
kandrak+     1674  0.0  0.3  322592  7936 ?        Ssl   00:34    0:00 /usr/libexec
kandrak+     1676  0.0  1.4 355124 29572 ?        Ssl   00:34    0:01 /usr/libexec
kandrak+     1685  0.0  1.4 716212 30132 ?        Ssl   00:34    0:00 /usr/libexec
kandrak+     1686  0.0  2.9  642648 59796 ?        Sl    00:34    0:01 /usr/libexec
kandrak+     1719  0.0  0.7  350800 14860 ?        Sl    00:34    0:00 /usr/libexec
kandrak+     1789  0.0  1.4  681796 29724 ?        Ssl   00:34    0:00 /usr/libexec
kandrak+     1931  0.5  2.6  976792 54608 ?        Ssl   00:35    0:17 /usr/libexec
kandrak+     1944  0.0  0.2  19240  4912 pts/0     Ss    00:35    0:00 bash
root         1991  0.0  2.0  479344 41592 ?        Ssl   00:35    0:01 /usr/libexec
kandrak+     2003  0.0  1.6  429844 34548 ?        Sl    00:35    0:00 update-notif
kandrak+     2006  0.0  0.3  170904  6484 ?        Ssl   00:35    0:00 /usr/libexec
root         2293  0.0  0.0     0      0 ?        I     00:52    0:00 [kworker/0:1
kandrak+     2655  0.0  0.2  19240  4944 pts/1     Ss    01:10    0:00 bash
root         2670  0.0  0.0     0      0 ?        I     01:11    0:00 [kworker/u2:
root         2762  0.0  0.0     0      0 ?        I     01:19    0:00 [kworker/u2:
kandrak+     2965  3.0  1.2  443244 25796 ?        Ssl   01:28    0:00 /usr/libexec
kandrak+     2973  0.0  0.0   2356   580 pts/0     S+    01:28    0:00 ./a.out
kandrak+     2974  0.0  0.0     0      0 pts/0     Z+    01:28    0:00 [a.out] <def
kandrak+     2975  0.0  0.1  20108  3232 pts/1     R+    01:28    0:00 ps aux
kandraksheeraj@srikithadesk-VirtualBox:~$

```