

Date: 14/09/2022

1) Write a program to emulate one-way continuous chat system by using named FIFO.

Code:

```
oneWayChat1.c
1 #include <stdio.h>
2 #include <string.h>
3 #include <sys/stat.h>
4 #include <sys/types.h>
5 #include <unistd.h>
6 #include <fcntl.h>
7 #include <errno.h>
8
9 void main()
10 {
11     char words[300];
12     int fd;
13     mkfifo("oneWayChat.txt",0666);
14     fd = open("oneWayChat.txt",O_WRONLY);
15     printf("Send some sentences as messages by typing them below-->\n\n");
16     while(1)
17     {
18         fgets(words,300,stdin);
19         if(words[0]=='\n') break;
20         write(fd,words,strlen(words));
21     }
22     printf("\nAll messages successfully sent\n");
23 }
```

```
1 #include <stdio.h>
2 #include <sys/stat.h>
3 #include <sys/types.h>
4 #include <unistd.h>
5 #include <fcntl.h>
6 #include <errno.h>
7
8 int main()
9 {
10     char words[300];
11     int num,fd;
12     mkfifo("oneWayChat.txt",0666);
13     fd = open("oneWayChat.txt",O_RDONLY);
14     printf("Messages will be received below-->\n\n");
15     while(1)
16     {
17         if((num = read(fd,words,300)) != -1){
18             words[num] = '\0';
19             if(words[0]=='\n'){
20                 printf("\nAll messages successfully received\n");
21                 return 0;
22             }
23             else
24                 printf("%s\n",words);
25         }
26     }
27 }
```

Output:

```
atish@atish-VirtualBox: ~/120CS0173/Lab07
atish@atish-VirtualBox:~/120CS0173/Lab07$ gcc oneWayChat1.c -o oneWayChat1
atish@atish-VirtualBox:~/120CS0173/Lab07$ gcc oneWayChat2.c -o oneWayChat2
atish@atish-VirtualBox:~/120CS0173/Lab07$ ./oneWayChat1
Hii I am Atish...
Send some sentences as messages by typing them below-->

hello
I am in Lab

```

```
atish@atish-VirtualBox: ~/120CS0173/Lab07
atish@atish-VirtualBox:~/120CS0173/Lab07$ ./oneWayChat2
Messages will be received below-->

Hii I am Atish...

hello

I am in Lab

```

2) Write a program to emulate two-way continuous chat system by using named FIFO.

Code:

```

twowayChat1.c
1 // C program to implement one side of FIFO
2 // This side writes first, then reads
3 #include <stdio.h>
4 #include <string.h>
5 #include <fcntl.h>
6 #include <sys/stat.h>
7 #include <sys/types.h>
8 #include <unistd.h>
9 int main()
10 {
11     int fd;
12
13     // FIFO file path
14     char * myfifo = "/tmp/myfifo";
15
16     // Creating the named file(FIFO)
17     // mkfifo(<pathname>, <permission>)
18     mkfifo(myfifo, 0666);
19
20     char arr1[80], arr2[80];
21     while (1)
22     {
23         // Open FIFO for write only
24         fd = open(myfifo, O_WRONLY);
25
26         // Take an input arr2 in from user.
27         // 80 is maximum length
28         printf("Type message below-->\n");
29         fgets(arr2, 80, stdin);
30
31         // Write the input arr2ing on FIFO
32         // and close it
33         write(fd, arr2, strlen(arr2)+1);
34         close(fd);
35
36         // Open FIFO for Read only
37         fd = open(myfifo, O_RDONLY);
38
39         // Read from FIFO
40         read(fd, arr1, sizeof(arr1));
41
42         // Print the read message
43         printf("User2: %s\n", arr1);
44         close(fd);
45     }
46     return 0;
47 }

```

```
1 // C program to implement one side of FIFO
2 // This side reads first, then reads
3 #include <stdio.h>
4 #include <string.h>
5 #include <fcntl.h>
6 #include <sys/stat.h>
7 #include <sys/types.h>
8 #include <unistd.h>
9
10 int main()
11 {
12     int fd1;
13
14     // FIFO file path
15     char * myfifo = "/tmp/myfifo";
16
17     // Creating the named file(FIFO)
18     // mkfifo(<pathname>,<permission>)
19     mkfifo(myfifo, 0666);
20
21     char str1[80], str2[80];
22     while (1)
23     {
24         // First open in read only and read
25         fd1 = open(myfifo,O_RDONLY);
26         read(fd1, str1, 80);
27
28         // Print the read string and close
29         printf("User1: %s\n", str1);
30         close(fd1);
31
32         // Now open in write mode and write
33         // string taken from user.
34         fd1 = open(myfifo,O_WRONLY);
35         printf("Type message below-->\n");
36         fgets(str2, 80, stdin);
37         write(fd1, str2, strlen(str2)+1);
38         close(fd1);
39     }
40     return 0;
41 }
```

Output:

```
atish@atish-VirtualBox:~/120CS0173/Lab07$ ./twoWayChat1
```

```
hello i am Atish,  
Type message below-->  
hello I am Atish...  
User2: I am Shubham
```

```
Type message below-->  
how are you Shubham  
User2: i am fine
```

```
Type message below-->  
User2: i am fine
```

```
Type message below-->  
█
```

```
atish@atish-VirtualBox:~/120CS0173/Lab07$ ./twoWayChat2
```

```
User1:
```

```
Type message below-->  
I am Shubham  
User1: hello i am Atish,
```

```
Type message below-->  
i am fine  
User1: hello I am Atish...
```

```
Type message below-->  
i am fine  
User1: how are you Shubham
```

```
Type message below-->
```