TE IT

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Inter process communication in Linux using following. (a). Pipes: Full duplex communication between parent and child processes. Parent process writes a pathname of a file (the contents of the file are desired) on one pipe to be read by child process and child process writes the contents of the file on second pipe to be read by parent process and displays on standard output.

```c
#include<stdio.h>
#include<unistd.h>
#include<string.h>
#include<stdlib.h>
#include<sys/types.h>
#include<sys/wait.h>

int main(void)
{
    int fd1[2],nbytes=1,fd2[2],a=0;
    pid_t pid;
    char string[80];
    char readbuffer[80];
    char ch='a',ch1='\n';
    FILE *fp;
    pipe(fd1);
    pipe(fd2);

    if((pid=fork())==-1)
    {
        perror("fork");
        exit(1);
    }
```

```c
if(pid==0)
{
        close(fd1[1]);
        read(fd1[0],readbuffer,sizeof(readbuffer));

        printf("filename %s is being read by child process through pipe
1\n\t",readbuffer);
        fp=fopen(readbuffer,"r");

        close(fd2[0]);

        printf("\n content of %s are being sent to parent process through
pipe2\n\t",readbuffer);
        while(a!=-1)
        {
                a=fscanf(fp,"%c",&ch);
                write(fd2[1],&ch,sizeof(ch));
        }
        close(fd2[1]);
        exit(0);
}
else
{
        close(fd1[0]);
        printf("\n\t In parent process\n");
        printf("\n\tEnter name of file::\n\t");
        scanf("%s",string);
        printf("\n filenames %s is being set by parent process to child process
through pipe1\n\t ",string);
        write(fd1[1],string,(strlen(string)+1));
        wait(NULL);
        close(fd1[1]);
        close(fd2[1]);
        printf("\n content of %s are being received  by parent process through
pipe2\n\t ",string);

        printf("\n\tIn parent process");
        printf("\n\tReceived message");
        while(nbytes!=0)
        {
                printf("%c",ch1);
```

```
                nbytes=read(fd2[0],&ch1,sizeof(ch1));
        }
        close(fd2[0]);
    }
    return(0);
}
```

Output:

    In parent process

    Enter name of file::
    omkar.txt

 filenames omkar.txt is being set by parent process to child process through pipe1
filename omkar.txt is being read by child process through pipe 1

 content of omkar.txt are being sent to parent process through pipe2

 content of omkar.txt are being received by parent process through pipe2

    In parent process
    Received message
This is omkar.