

Client-Server

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Introduction:

We have implemented a client server application in C, as per Dr.Boufama's guidelines. Out here, the server process and the client process runs on two different machines wherein the connection is established using sockets.

The server performs the following tasks:

It starts running before any client and it waits for connection.

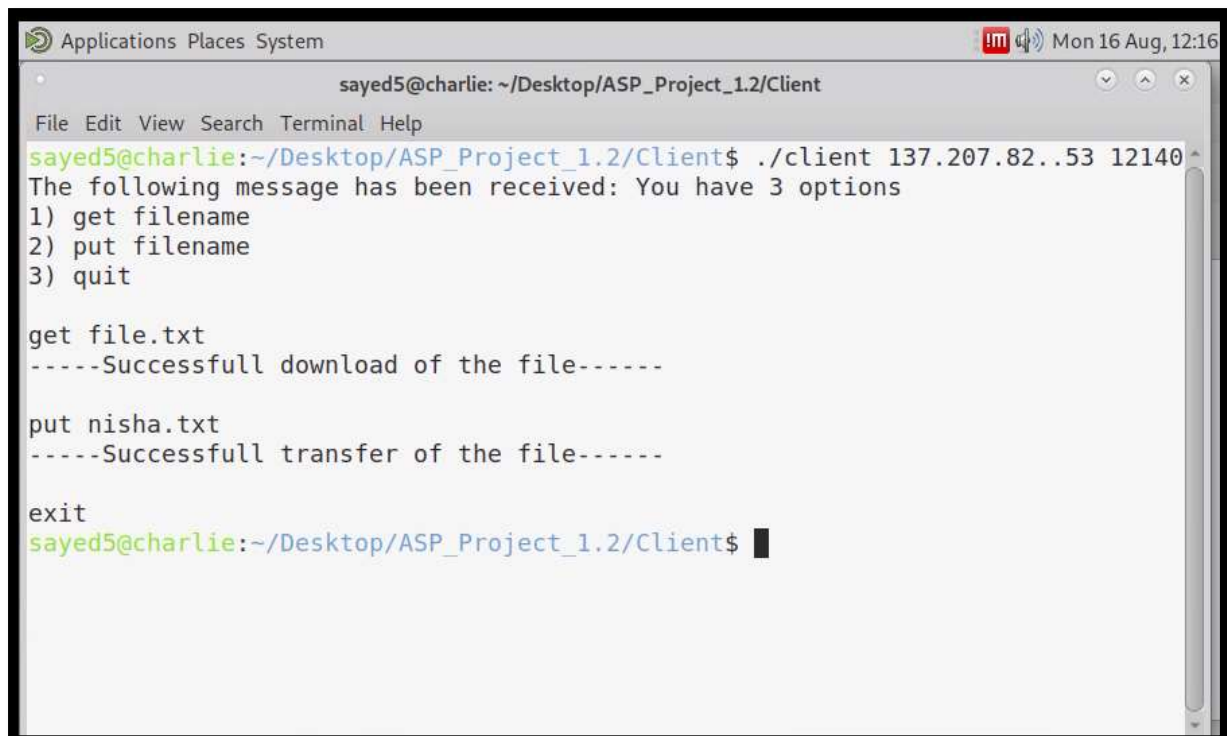
Then the server gets a client, it forks and let the child process take care of the client in a separate function, called `serviceClient`, while the parent process goes back to wait for the next client.

- Then, the server's child process
 1. uses "**dup2()**" to make the screen descriptor designate the client socket
 2. gets in an infinite loop then :
 - reads a shell command from the client's socket,
 - if the client sends "quit", then the server's child, closes socket and quits.
 - otherwise, it excutes command, using the "**system()**" library function,

The client process connects to the server, then

- gets into an infinite loops
 1. reads a command from keyboard,
 2. write the command to the server,
 3. if command is "quit", closes socket and quits
 4. otherwise, reads command output from socket and displays them on the screen

Attached are the screenshots:



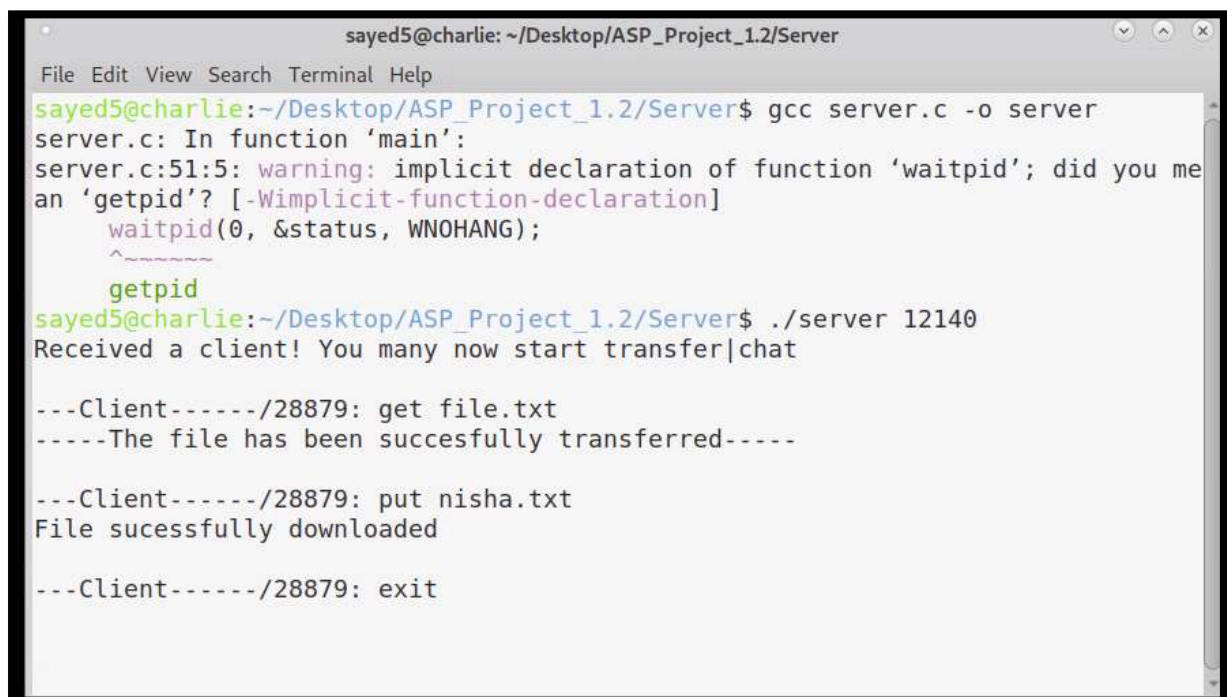
A terminal window titled "Applications Places System" with a status bar showing "Mon 16 Aug, 12:16". The window title bar also includes "sayed5@charlie: ~/Desktop/ASP_Project_1.2/Client". The terminal shows the following commands and output:

```
sayed5@charlie:~/Desktop/ASP_Project_1.2/Client$ ./client 137.207.82..53 12140
The following message has been received: You have 3 options
1) get filename
2) put filename
3) quit

get file.txt
-----Successfull download of the file-----

put nisha.txt
-----Successfull transfer of the file-----

exit
sayed5@charlie:~/Desktop/ASP_Project_1.2/Client$
```



A terminal window titled "Applications Places System" with a status bar showing "Mon 16 Aug, 12:16". The window title bar also includes "sayed5@charlie: ~/Desktop/ASP_Project_1.2/Server". The terminal shows the following commands and output:

```
sayed5@charlie:~/Desktop/ASP_Project_1.2/Server$ gcc server.c -o server
server.c: In function 'main':
server.c:51:5: warning: implicit declaration of function 'waitpid'; did you mean
an 'getpid'? [-Wimplicit-function-declaration]
    waitpid(0, &status, WNOHANG);
    ^
    getpid
sayed5@charlie:~/Desktop/ASP_Project_1.2/Server$ ./server 12140
Received a client! You many now start transfer|chat

---Client-----/28879: get file.txt
-----The file has been succesfully transferred-----

---Client-----/28879: put nisha.txt
File sucessfully downloaded

---Client-----/28879: exit
```