

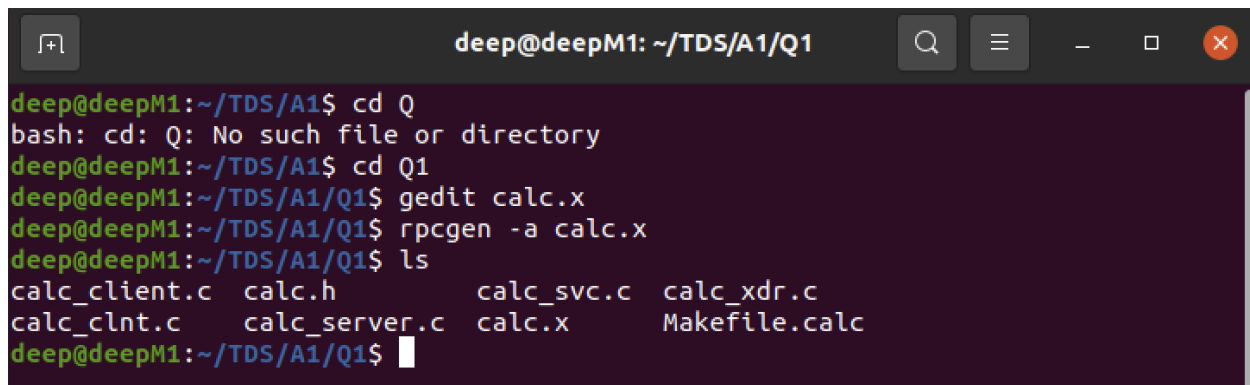
Name: Deep Walke

Roll Number: BT19CSE122

Distributed System Assignment 1

Output Screenshots

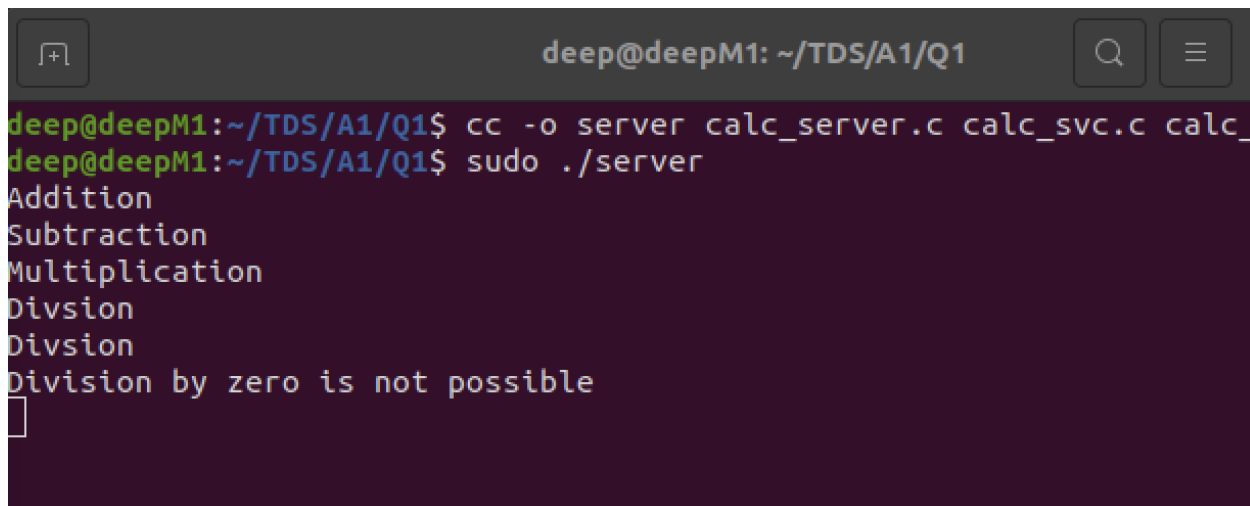
- Initially created an IDL file (calc.x in this case), and compiling that file creates multiple files which we can see.



```
deep@deepM1: ~/TDS/A1/Q1
deep@deepM1:~/TDS/A1$ cd Q
bash: cd: Q: No such file or directory
deep@deepM1:~/TDS/A1$ cd Q1
deep@deepM1:~/TDS/A1/Q1$ gedit calc.x
deep@deepM1:~/TDS/A1/Q1$ rpcgen -a calc.x
deep@deepM1:~/TDS/A1/Q1$ ls
calc_client.c  calc.h          calc_svc.c     calc_xdr.c
calc_clnt.c   calc_server.c  calc.x         Makefile.calc
deep@deepM1:~/TDS/A1/Q1$
```

Question 1: Implementation of arithmetic calculator using RPC

Server



```
deep@deepM1:~/TDS/A1/Q1$ cc -o server calc_server.c calc_svc.c calc_
deep@deepM1:~/TDS/A1/Q1$ sudo ./server
Addition
Subtraction
Multiplication
Division
Division
Division by zero is not possible

```

Client

```
deep@deepM1: ~/TDS/A1/Q1
deep@deepM1:~/TDS/A1/Q1$ cc -o client calc_client.c calc_clnt.c calc_xdr.c
deep@deepM1:~/TDS/A1/Q1$ sudo ./client localhost
Enter arithmetic equation : 8 + 11
8.000000 + 11.000000 = 19.000000
deep@deepM1:~/TDS/A1/Q1$ sudo ./client localhost
Enter arithmetic equation : 89 - 11
89.000000 - 11.000000 = 78.000000
deep@deepM1:~/TDS/A1/Q1$ sudo ./client localhost
Enter arithmetic equation : 17 * 6
17.000000 * 6.000000 = 102.000000
deep@deepM1:~/TDS/A1/Q1$ sudo ./client localhost
Enter arithmetic equation : 65 / 13
65.000000 / 13.000000 = 5.000000
deep@deepM1:~/TDS/A1/Q1$ sudo ./client localhost
Enter arithmetic equation : 9 / 0
9.000000 / 0.000000 = ERROR
Division by zero is not possible
deep@deepM1:~/TDS/A1/Q1$
```

Question 2: Write a program that returns the current date and time using RPC

Server

```
deep@deepM1: ~/TDS/A1/Q2
deep@deepM1:~/TDS/A1/Q2$ cc -o server time_server.c time_svc.c
deep@deepM1:~/TDS/A1/Q2$ sudo ./server
```

Client

```
deep@deepM1: ~/TDS/A1/Q2
deep@deepM1:~/TDS/A1/Q2$ cc -o client time_client.c time_clnt.c
deep@deepM1:~/TDS/A1/Q2$ sudo ./client localhost
The current date and time is: Mon Feb 20 20:52:50 2023
deep@deepM1:~/TDS/A1/Q2$
```

Question 3: Implementation of an RPC client-server chat.

- Client can send a message to the server, connection successful.

```
deep@deepM1:~/TDS/A1/Q3$ cc -o client chat_client.c chat_clnt.c
deep@deepM1:~/TDS/A1/Q3$ sudo ./client localhost
You can now start chatting...
Client: █
```

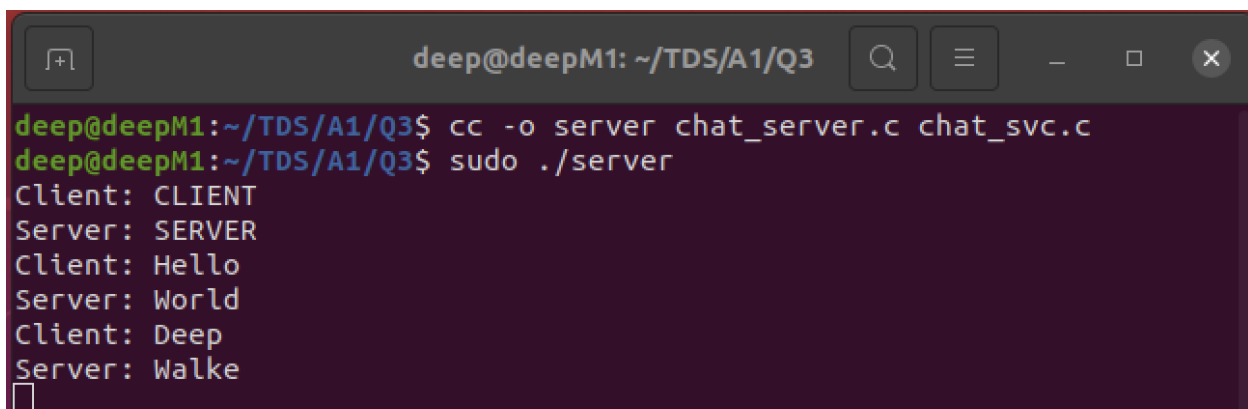
- Client's message received on the server side

```
deep@deepM1:~/TDS/A1/Q3$ cc -o server chat_server.c chat_svc.c
deep@deepM1:~/TDS/A1/Q3$ sudo ./server
[sudo] password for deep:
Client: CLIENT
Server: █
```

- Server's message can be seen on the client's side.

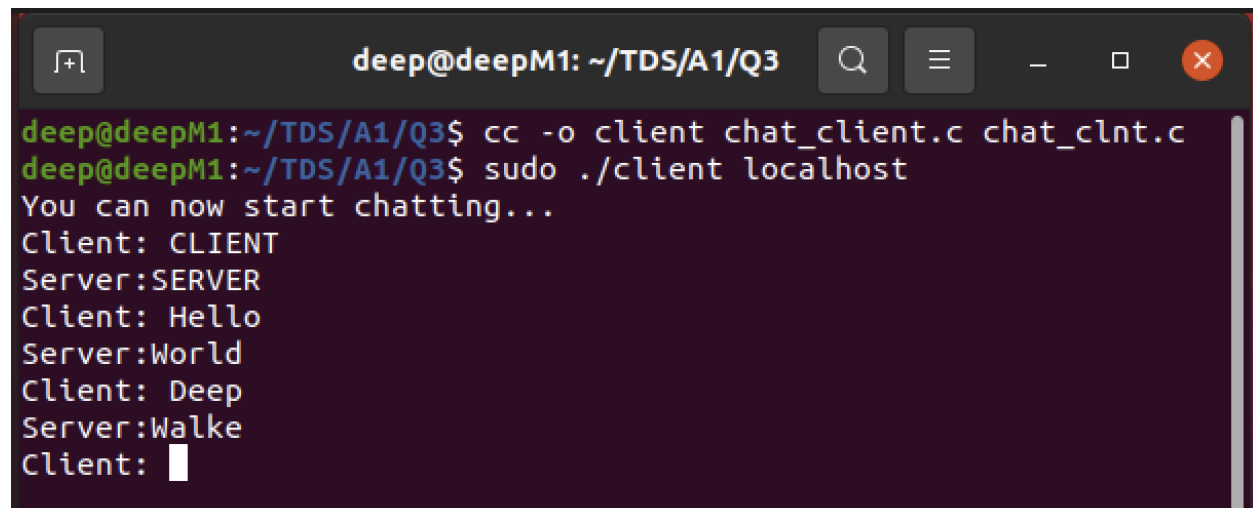
```
deep@deepM1:~/TDS/A1/Q3$ cc -o client chat_client.c chat_clnt.c
deep@deepM1:~/TDS/A1/Q3$ sudo ./client localhost
You can now start chatting...
Client: CLIENT
Server: SERVER
```

Server (complete conversation)



```
deep@deepM1: ~/TDS/A1/Q3
deep@deepM1:~/TDS/A1/Q3$ cc -o server chat_server.c chat_svc.c
deep@deepM1:~/TDS/A1/Q3$ sudo ./server
Client: CLIENT
Server: SERVER
Client: Hello
Server: World
Client: Deep
Server: Walke
█
```

Client (complete conversation)

A terminal window titled 'deep@deepM1: ~/TDS/A1/Q3' with standard window controls. The terminal shows the compilation of a chat client and a subsequent chat session. The user runs 'cc -o client chat_client.c chat_clnt.c' and then 'sudo ./client localhost'. The program outputs 'You can now start chatting...'. The chat session begins with 'Client: CLIENT' and 'Server: SERVER'. The user sends 'Hello' and the server responds 'World'. The user sends 'Deep' and the server responds 'Walke'. The user then enters a blank line.

```
deep@deepM1:~/TDS/A1/Q3$ cc -o client chat_client.c chat_clnt.c
deep@deepM1:~/TDS/A1/Q3$ sudo ./client localhost
You can now start chatting...
Client: CLIENT
Server: SERVER
Client: Hello
Server: World
Client: Deep
Server: Walke
Client: 
```