Socket Programming Assignment

Instructions

1. This will be an individual assignment.
2. Try not to look in the internet for coding. Use Beej's network programming file for doubts on socket functions.
3. Copying from internet or others is a serious offence. If you are caught copying you will be given zero marks.
4. Write your code in C/C++ (otherwise you need to get permission)
5. This assignment will be graded. So, write comments after code. Work to make the code readable.
6. Deadline for submission in 19/2/18. Note that there will be other assignments next week. So try to finish this as early as possible.

Assignment-I

You will make a client-server program (internet domain, stream socket) which does the following.
1. The server starts on a port (given as parameter in the command line).
2. The client is started (server IP and port are provided in command line).
3. Client connects to the server and waits for user messages on terminal. User messages are sent to server by the client using the socket created.
4. The server waits for user messages from client. If server receives message "Bye" from client, it replies "Bye". For any other string, server replies the same message but after making it into capital letters.
5. The client is closed, when it gets the message "Bye" from server.

Example Server

```
$ ./server 5000
Connected to client socket number 23
Message from 23: Hi, Whatsup?
Replied to 23: HI, WHATSUP?
Message from 23: Bye
Replied to 23: Bye
```

Example Client

```
$ ./client 115.153.72.164 5000
Server Message: Good Morning! Welcome to Mr./Miss. XXXX's server.
Enter message for server: Hi, Whatsup?
Server Message: HI, WHATSUP?
Enter message for server: Bye
Server Message: Bye
Closing connection.
```

Assignment-II

Only server program needs to change from previous assignment. You will need to use fork() function call.
1. The server should be able to connect to more than one client at the same time.
2. Server is never shutdown. It listens and responds to clients all the time.