CSE1004 – Network and Communication Lab [L52+L53]
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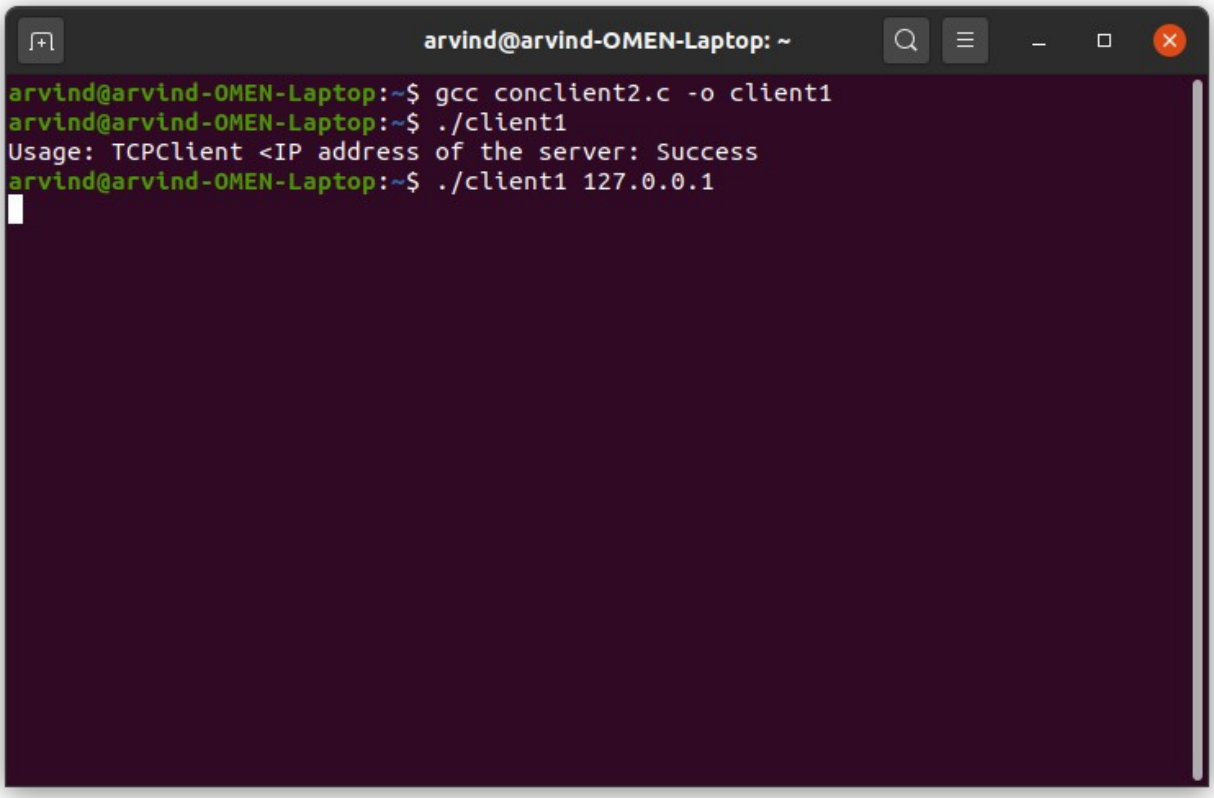
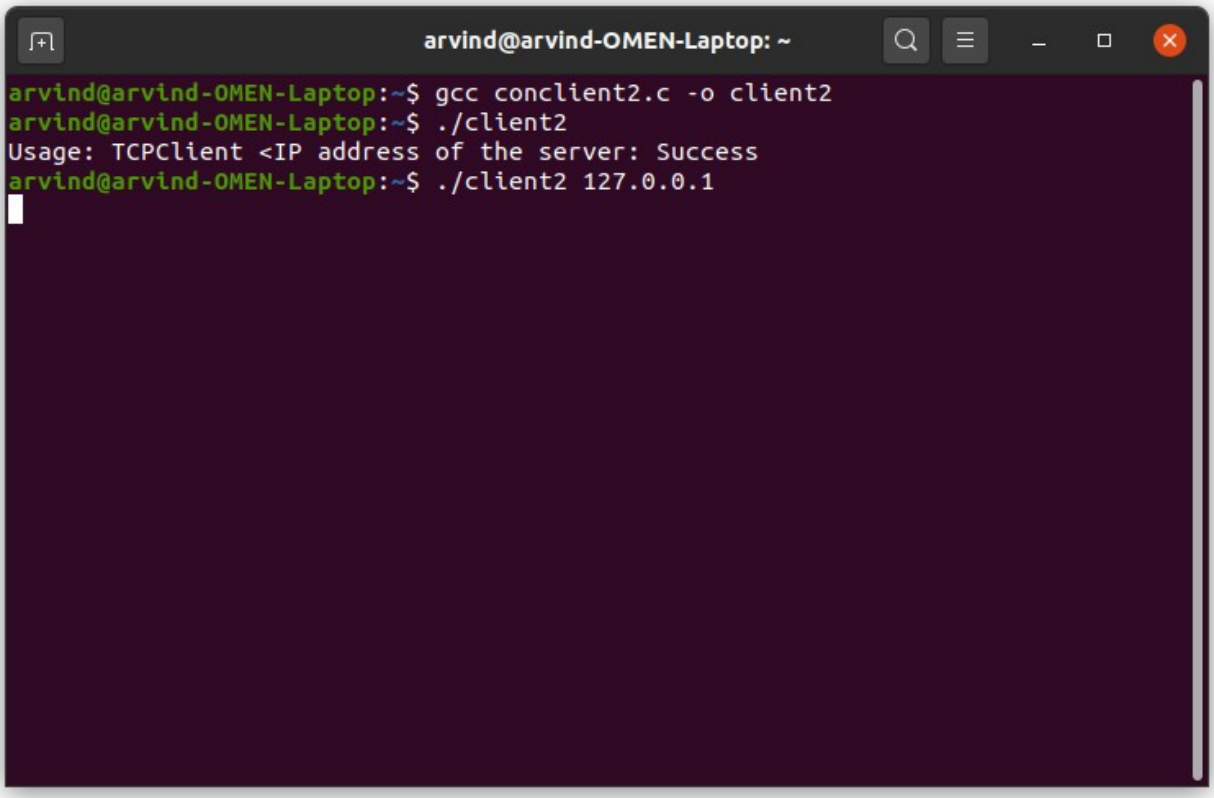
CLIENT CODE:

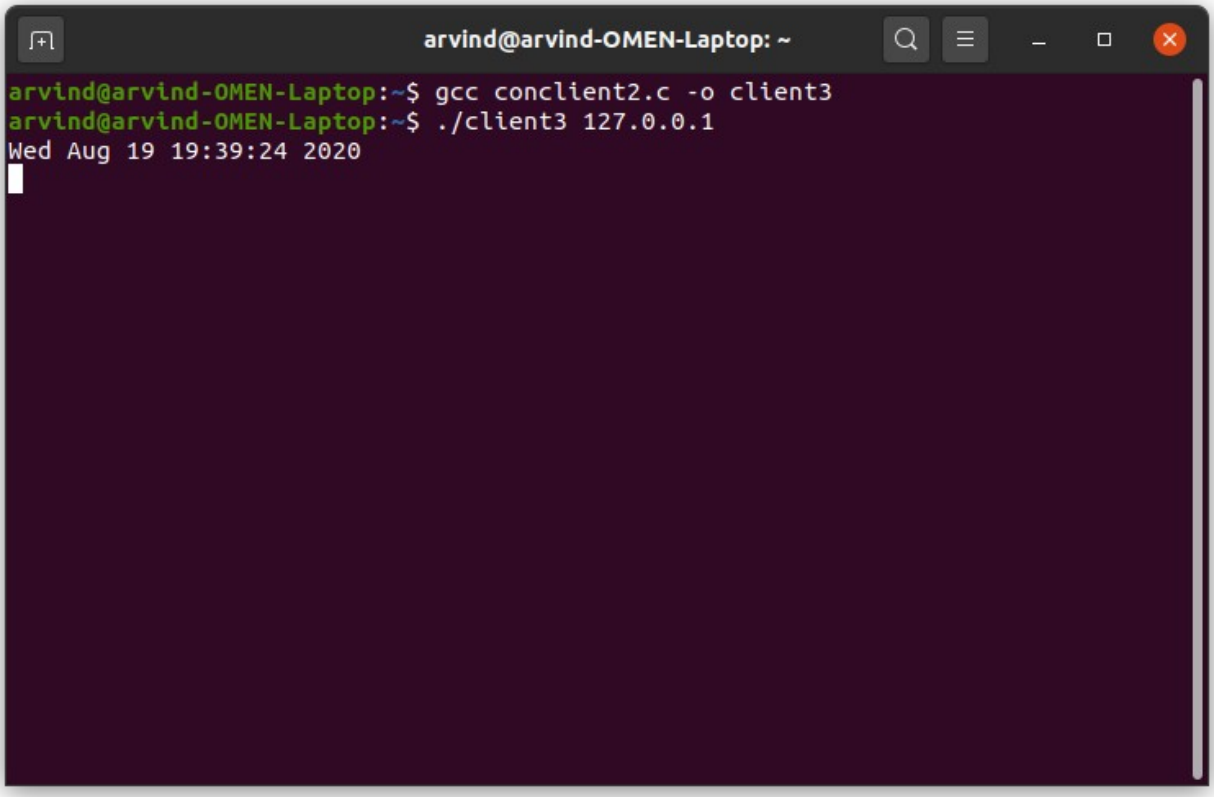
```
#include <stdlib.h>
#include <stdio.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <string.h>
#include <arpa/inet.h>

#define MAXLINE 4096 /*max text line length*/
#define SERV_PORT 3000 /*port*/

int
main(int argc, char **argv)
{
 int sockfd;
 struct sockaddr_in servaddr;
 char sendline[MAXLINE], recvline[MAXLINE];

 //basic check of the arguments
 //additional checks can be inserted
 if (argc !=2) {
  perror("Usage: TCPClient <IP address of the server");
  exit(1);
 }

 //Create a socket for the client
 //If sockfd<0 there was an error in the creation of the
socket
 if ((sockfd = socket (AF_INET, SOCK_STREAM, 0)) <0) {
  perror("Problem in creating the socket");
```

```
 exit(2);
}

//Creation of the socket
memset(&servaddr, 0, sizeof(servaddr));
servaddr.sin_family = AF_INET;
servaddr.sin_addr.s_addr= inet_addr(argv[1]);
servaddr.sin_port =  htons(SERV_PORT); //convert to big-
endian order

//Connection of the client to the socket
if (connect(sockfd, (struct sockaddr *) &servaddr,
sizeof(servaddr))<0) {
 perror("Problem in connecting to the server");
 exit(3);
}

while (fgets(sendline, MAXLINE, stdin) != NULL) {

 ticks = time(NULL);
 snprintf(sendline, sizeof(sendline), "%.24s\r\n",
ctime(&ticks));
 write(connfd, sendline, strlen(sendline));
 send(sockfd, sendline, strlen(sendline), 0);

 if (recv(sockfd, recvline, MAXLINE,0) == 0){
  //error: server terminated prematurely
  perror("The server terminated prematurely");
  exit(4);
 }
 printf("%s", "String received from the server: ");
 fputs(recvline, stdout);
}

exit(0);
```

}


arvind@arvind-OMEN-Laptop: ~
arvind@arvind-OMEN-Laptop:~$ gcc conclient2.c -o client1
arvind@arvind-OMEN-Laptop:~$ ./client1
Usage: TCPClient <IP address of the server: Success
arvind@arvind-OMEN-Laptop:~$ ./client1 127.0.0.1


arvind@arvind-OMEN-Laptop: ~
arvind@arvind-OMEN-Laptop:~$ gcc conclient2.c -o client2
arvind@arvind-OMEN-Laptop:~$ ./client2
Usage: TCPClient <IP address of the server: Success
arvind@arvind-OMEN-Laptop:~$ ./client2 127.0.0.1

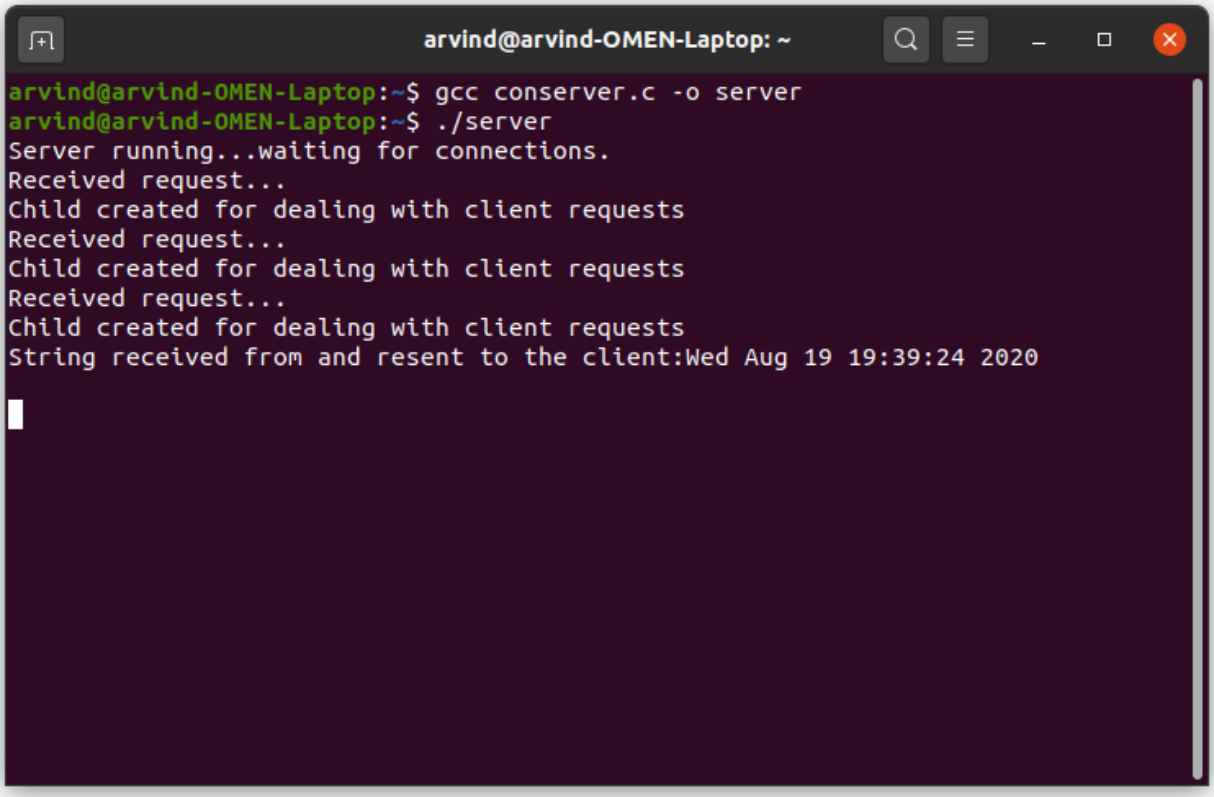


SERVER CODE:

```
#include <stdlib.h>
#include <stdio.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <string.h>
#include <unistd.h>

#define MAXLINE 4096 /*max text line length*/
#define SERV_PORT 3000 /*port*/
#define LISTENQ 8 /*maximum number of client
connections*/

int main (int argc, char **argv)
{
```

```
 int listenfd, connfd, n;
 pid_t childpid;
 socklen_t clilen;
 char buf[MAXLINE];
 struct sockaddr_in cliaddr, servaddr;

 //Create a socket for the soclet
 //If sockfd<0 there was an error in the creation of the
socket
 if ((listenfd = socket (AF_INET, SOCK_STREAM, 0)) <0) {
  perror("Problem in creating the socket");
  exit(2);
 }


 //preparation of the socket address
 servaddr.sin_family = AF_INET;
 servaddr.sin_addr.s_addr = htonl(INADDR_ANY);
 servaddr.sin_port = htons(SERV_PORT);

 //bind the socket
 bind (listenfd, (struct sockaddr *) &servaddr,
sizeof(servaddr));

 //listen to the socket by creating a connection queue, then
wait for clients
 listen (listenfd, LISTENQ);

 printf("%s\n","Server running...waiting for connections.");

 for ( ; ; ) {

  clilen = sizeof(cliaddr);
  //accept a connection
```

```
  connfd = accept (listenfd, (struct sockaddr *) &cliaddr,
&clilen);

  printf("%s\n","Received request...");

  if ( (childpid = fork ()) == 0 ) {//if it's 0, it's child process

 printf ("%s\n","Child created for dealing with client
requests");

  //close listening socket
  close (listenfd);

  while ( (n = recv(connfd, buf, MAXLINE,0)) > 0)  {
   printf("%s","String received from and resent to the
client:");
   puts(buf);
   send(connfd, buf, n, 0);
  }

  if (n < 0)
   printf("%s\n", "Read error");
  exit(0);
 }
 //close socket of the server
 close(connfd);
}
}
```



I am unable to get the date and time correctly but I feel the code is right and it is error free