

**Distributed Computing**

Lab Assignment-1

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BCS-F11-201

Submitted To:

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**Client side code:**

#include <sys/socket.h>

#include <sys/types.h>

#include <netinet/in.h>

#include <netdb.h>

#include <stdio.h>

#include <string.h>

#include <stdlib.h>

#include <unistd.h>

#include <errno.h>

#include <arpa/inet.h>

int main(int argc, char \*argv[])

{

int sockfd = 0, n = 0;

char recvBuff[1024];

struct sockaddr\_in serv\_addr;

if(argc != 2)

{

printf("\n Usage: %s <ip of server> \n",argv[0]);

return 1;

}

memset(recvBuff, '0',sizeof(recvBuff));

if((sockfd = socket(AF\_INET, SOCK\_STREAM, 0)) < 0)

{

printf("\n Error : Could not create socket \n");

return 1;

}

memset(&serv\_addr, '0', sizeof(serv\_addr));

serv\_addr.sin\_family = AF\_INET;

serv\_addr.sin\_port = htons(5000);

if(inet\_pton(AF\_INET, argv[1], &serv\_addr.sin\_addr)<=0)

{

printf("\n inet\_pton error occured\n");

return 1;

}

if( connect(sockfd, (struct sockaddr \*)&serv\_addr, sizeof(serv\_addr)) < 0)

{

printf("\n Error : Connect Failed \n");

return 1;

}

printf("Please enter the message: ");

bzero(recvBuff,1024);

fgets(recvBuff,1024,stdin);

n = write(sockfd,recvBuff,strlen(recvBuff));

bzero(recvBuff,1024);

n = read(sockfd,recvBuff,1024);

if (n < 0){

error("ERROR reading from socket");

}

printf("%s\n",recvBuff);

read(sockfd,recvBuff,1024);

close(sockfd);

return 0;

}

**Server side code:**

#include <sys/socket.h>

#include <netinet/in.h>

#include <arpa/inet.h>

#include <stdio.h>

#include <stdlib.h>

#include <unistd.h>

#include <errno.h>

#include <string.h>

#include <sys/types.h>

#include <time.h>

int main(int argc, char \*argv[])

{

int listenfd = 0, connfd = 0,n=0;

struct sockaddr\_in serv\_addr;

char sendBuff[1025];

time\_t ticks;

listenfd = socket(AF\_INET, SOCK\_STREAM, 0);

memset(&serv\_addr, '0', sizeof(serv\_addr));

memset(sendBuff, '0', sizeof(sendBuff));

serv\_addr.sin\_family = AF\_INET;

serv\_addr.sin\_addr.s\_addr = htonl(INADDR\_ANY);

serv\_addr.sin\_port = htons(5000);

bind(listenfd, (struct sockaddr\*)&serv\_addr, sizeof(serv\_addr));

listen(listenfd, 10);

while(1)

{

connfd = accept(listenfd, (struct sockaddr\*)NULL, NULL);

bzero(sendBuff,1025);

n = read(connfd,sendBuff,1025);

if (n < 0){ error("ERROR reading from socket");}

printf("Here is the message: %s\n",sendBuff);

ticks = time(NULL);

snprintf(sendBuff, sizeof(sendBuff), "%.24s\r\n", ctime(&ticks));

write(connfd,"I got your message at this time: ",31);

write(connfd, sendBuff, strlen(sendBuff));

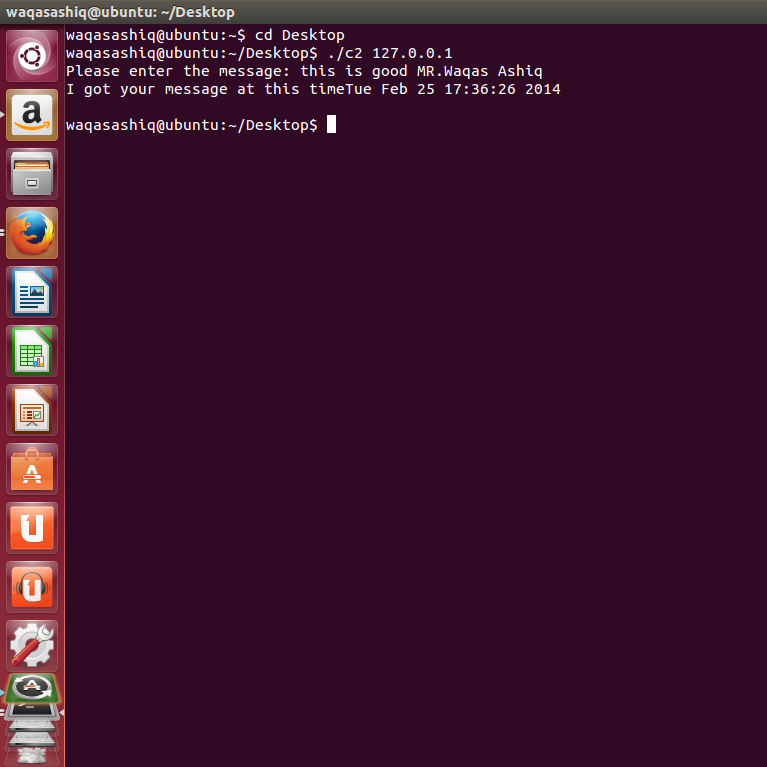
close(connfd);

sleep(1);

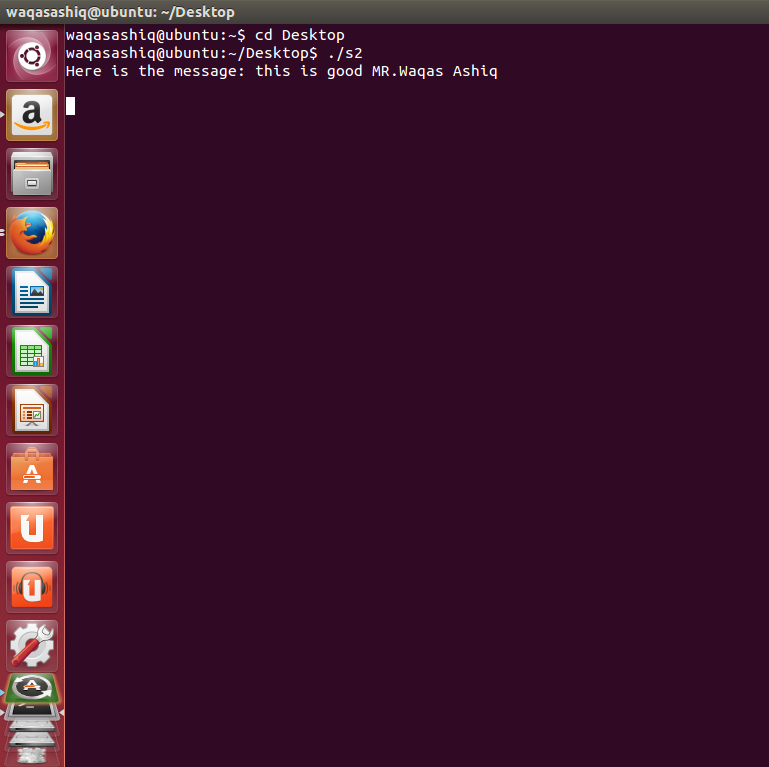
}

}

**Client Side output:**



**Server Side output:**

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