

18CSC302J (Computer Networks Lab)

Lab session 3 - CONCURRENT TCP/IP DAY-TIME SERVER

Name :- Puneet Sharma
Reg. No. :- RA1911003010331
Class :-CSE F1

SERVER 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>
#define PORT 8031
int main(void)
{
    int listenfd = 0, connfd = 0;

    struct sockaddr_in serv_addr;

    char sendBuff[1025];
    int numrv;

    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(PORT);

    bind(listenfd, (struct sockaddr*)&serv_addr, sizeof(serv_addr));
    printf("Server running\n");
    if(listen(listenfd, 10) == -1){
        printf("Failed to listen\n");
```

```

        return -1;
    }
    int t=1;
    while(1)
    {
        t++;
        connfd = accept(listenfd, (struct sockaddr*)NULL ,NULL);
        time_t currentTime ;
        time(&currentTime);
        printf("\nClient %d has requested for time",t);
        send(connfd,ctime(&currentTime), 30, 0);
    }
    return 0;}

```

```

1  #include <sys/socket.h>
2  #include <netinet/in.h>
3  #include <arpa/inet.h>
4  #include <stdio.h>
5  #include <stdlib.h>
6  #include <unistd.h>
7  #include <errno.h>
8  #include <string.h>
9  #include <sys/types.h>
10 #include <time.h>
11 #define PORT 8031
12 int main(void)
13 {
14     int listenfd = 0, connfd = 0;
15
16     struct sockaddr_in serv_addr;
17
18     char sendBuff[1025];
19     int numrv;
20
21     listenfd = socket(AF_INET, SOCK_STREAM, 0);
22
23     memset(&serv_addr, '0', sizeof(serv_addr));
24     memset(sendBuff, '0', sizeof(sendBuff));
25
26     serv_addr.sin_family = AF_INET;
27     serv_addr.sin_addr.s_addr = htonl(INADDR_ANY);
28     serv_addr.sin_port = htons(PORT);
29
30     bind(listenfd, (struct sockaddr*)&serv_addr, sizeof(serv_addr));
31     printf("Server running\n");
32     if(listen(listenfd, 10) == -1){
33         printf("Failed to listen\n");
34         return -1;
35     }
36     int t=1;
37     while(1)
38     {
39         t++;
40         connfd = accept(listenfd, (struct sockaddr*)NULL ,NULL);
41         time_t currentTime ;
42         time(&currentTime);
43         printf("\nClient %d has requested for time",t);

```

39:13 C and C++ Spaces: 4

331/Daytime_server.c - Re

Stop Command: 331/Daytime_server.c Runner: C CWD ENV

Server running

```

Client 1 has requested for time
Client 2 has requested for time
Client 3 has requested for time
Client 4 has requested for time

```

CLINT CODE:-

```
#include<netinet/in.h>
#include<unistd.h>
#include<string.h>
#include<stdio.h>
#include<arpa/inet.h>
#include<stdlib.h>
#include<time.h>
#define PORT 8031
int main(int argc, char const *argv[])
{
    int sock = 0, valread;
    struct sockaddr_in serv_addr;
    char buff[1024];
    if ((sock = socket(AF_INET, SOCK_STREAM, 0)) < 0)
    {
        printf("\n Socket creation error \n");
        return -1;
    }

    serv_addr.sin_family = AF_INET;
    serv_addr.sin_port = htons(PORT);

    if(inet_pton(AF_INET, "127.0.0.1", &serv_addr.sin_addr)<=0)
    {
        printf("\nInvalid address/ Address not supported \n");
        return -1;
    }

    if (connect(sock, (struct sockaddr *)&serv_addr, sizeof(serv_addr)) < 0)
    {
        printf("\nConnection Failed \n");
        return -1;
    }
    else{
        printf("\nConnected to Server\n");
    }
    read(sock, buff, sizeof(buff));
    printf("Server Day-Time is: %s", buff);

    return 0;
}
```

Daytime_clint.c

```
1  #include<netinet/in.h>
2  #include<unistd.h>
3  #include<string.h>
4  #include<stdio.h>
5  #include<arpa/inet.h>
6  #include<stdlib.h>
7  #include<time.h>
8  #define PORT 8031
9  int main(int argc, char const *argv[])
10 {
11     int sock = 0, valread;
12     struct sockaddr_in serv_addr;
13     char buff[1024];
14     if ((sock = socket(AF_INET, SOCK_STREAM, 0)) < 0)
15     {
16         printf("\n Socket creation error \n");
17         return -1;
18     }
19
20     serv_addr.sin_family = AF_INET;
21     serv_addr.sin_port = htons(PORT);
22
23     if(inet_pton(AF_INET, "127.0.0.1", &serv_addr.sin_addr)<=0)
24     {
25         printf("\nInvalid address/ Address not supported \n");
26         return -1;
27     }
28
29     if (connect(sock, (struct sockaddr *)&serv_addr, sizeof(serv_addr)) < 0)
30     {
31         printf("\nConnection Failed \n");
32         return -1;
33     }
34     else{
35         printf("\nConnected to Server\n");
36     }
37     read(sock, buff, sizeof(buff));
38     printf("Server Day-Time is: %s", buff);
39
40     return 0;
41 }
42
```

36.6 C and C++ Spaces: 4

331/Daytime_clint.c - Stop

Run Command: 331/Daytime_clint.c Runner: C CWD ENV

Running /home/ubuntu/environment/331/Daytime_clint.c

Connected to Server
Server Day-Time is: Thu Aug 19 09:39:33 2021

Process exited with code: 0