# 19CSE301

# Computer Networks Lab

## Lab Sheet 4 - UDP Socket Programming

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- **Implement a Client Server Chat application using UDP.**

- **The client will send a number to the server and the server returns the sum after adding all the digits in the number.**

## UDP Server

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

```c
int main()
{
        struct sockaddr_in server;
        struct sockaddr_in client;
        unsigned int sockfd, clientlen;
        char rmsg[100], smsg[100];

        sockfd = socket (AF_INET, SOCK_DGRAM, IPPROTO_UDP);
        bzero ((char*) &server, sizeof (server));

        server.sin_family = AF_INET;
        inet_aton ("127.0.0.1", &server.sin_addr);
        server.sin_port = htons (3000);

        bind (sockfd, (struct sockaddr*)&server, sizeof (server));

        recvfrom (sockfd, rmsg, 20, 0, (struct sockaddr*)&client, &clientlen);
        printf ("%s", rmsg);

        int n = atoi(rmsg);
        int sum=0, m;

        while(n>0)
        {
                m=n%10;
                sum=sum+m;
                n=n/10;
        }
```

```c
        sprintf(smsg, "%d", sum);
        sendto (sockfd, smsg, 20, 0, (struct sockaddr*)&client, clientlen);
        return 1;

}
```

# UDP Client

```c
#include <stdio.h>

#include <sys/types.h>

#include <sys/socket.h>

#include <netinet/in.h>

#include <arpa/inet.h>

#include <string.h>

int main()

{

        struct sockaddr_in serv_addr, client_addr;

        unsigned int sockfd, client_len;


        sockfd = socket (AF_INET, SOCK_DGRAM, 0);

        bzero ((char*)&serv_addr, sizeof (serv_addr));


        serv_addr.sin_family = AF_INET;

        inet_aton ("127.0.0.1", &serv_addr.sin_addr);

        serv_addr.sin_port = htons (3000);


        bzero ((char*) &client_addr, sizeof (client_addr));
```

```c
        client_addr.sin_family = AF_INET;

        inet_aton ("127.0.0.1", &client_addr.sin_addr);

        client_addr.sin_port = htons (0);


        bind (sockfd, (struct sockaddr*)&client_addr, sizeof (client_addr));


        char msg[100] = "12345";

        char rec[100];


        sendto (sockfd, msg, 10, 0, (struct sockaddr*)&serv_addr, sizeof
(serv_addr));

        recvfrom (sockfd, rec, 10, 0, (struct sockaddr*)&client_addr,
&client_len);


        printf ("%s", rec);


        return 1;
}
```
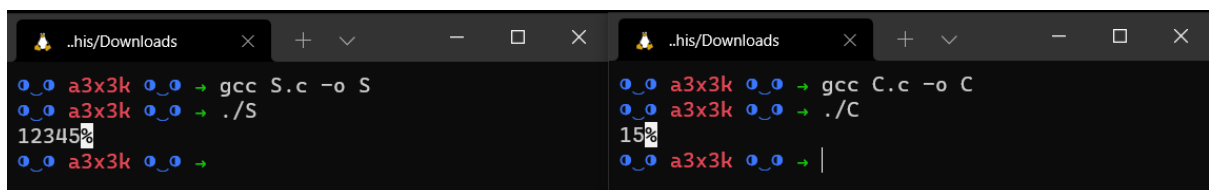


*Thankyou!!*