ASSIGNMENT NO:6 **DATE:28/03/2017**

PROGRAM TITLE:Develop a Client Server Application using UDP where the client will send a sentence to the server and the server will display the number of vowels, consonants and white spaces in the sentence.

PROGRAM CODE:

server.c

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

#define RECVBUFSIZE 1024

main()
{
      int servSock, recvBufSize,res;
      struct sockaddr_in serverAddr;
      struct sockaddr_storage serverStorage;
      socklen_t addr_size;
      char server_ip[] = "127.0.0.1";
      unsigned short server_port=25051;
      char recvBuf[RECVBUFSIZE],sendBuf[RECVBUFSIZE];
      bzero(&serverAddr,sizeof(serverAddr));
      serverAddr.sin_family = AF_INET;//Internet Address family
      serverAddr.sin_port = htons(server_port);//Local Port address
      inet_aton(server_ip,(&serverAddr.sin_addr));
      if((servSock=socket(AF_INET,SOCK_DGRAM,0))<0)//DGRAM as UDP uses DGRAM
      {
            printf("\n\tSocket Error.\n");
            exit(1);
      }
      printf("\n\tSERVER: Socket Created.\n");
      if((bind(servSock,(struct sockaddr*)&serverAddr, sizeof(serverAddr)))<0)//-1
indicates failure
      {
            printf("\n\tBind Error.\n");
            close(servSock);//Closing the socket
            exit(1);
      }
      printf("\n\tSERVER: Binded Successfully.\n");
      while(1)
      {
            addr_size = sizeof(serverStorage);
            if(recvBufSize=recvfrom(servSock,recvBuf,RECVBUFSIZE,0,(struct sockaddr
*)&serverStorage, &addr_size)<0)
            {
                  printf("\n\tReceive Error.\n");
            }
            res=atoi(recvBuf);
            sprintf(sendBuf,"\nNumber of months and days converted : %d months %d
days\n", (res/30), (res%30));
            if(sendto(servSock,sendBuf,sizeof(sendBuf),0,(struct sockaddr
*)&serverStorage,addr_size)<0)
            {
                  printf("\n\tSend Error.\n");
                  exit(1);
            }
```

```
	}
}
```

client.c

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

#define BUFSIZE 1024

main()
{
	int clientSock,r;
	struct sockaddr_in serverAddr;
	socklen_t addr_size;
	char server_ip[] = "127.0.0.1";
	unsigned short server_port=25051;
	char sendBuf[BUFSIZE], recvBuf[BUFSIZE];
	printf("\n\tEnter number of days:\n\t");
	gets(sendBuf);
	bzero(&serverAddr,sizeof(serverAddr));
	serverAddr.sin_family = AF_INET;//Internet Address family
	serverAddr.sin_port = htons(server_port);//Local Port address
	inet_aton(server_ip,(&serverAddr.sin_addr));
	if((clientSock=socket(AF_INET,SOCK_DGRAM,0))<0)
	{
		printf("\n\tSocket Error.\n");
		exit(1);
	}
	printf("\n\tCLIENT: Socket Created.\n");
	addr_size=sizeof(struct sockaddr_in);
	if(sendto(clientSock,sendBuf,sizeof(sendBuf),0,(struct sockaddr
*)&serverAddr,addr_size)<0)
	{
		printf("\n\tSend Error.\n");
		exit(1);
	}
	printf("\n\tCLIENT: Sent.\n");
	if((r=recvfrom(clientSock,recvBuf,sizeof(recvBuf),0,(struct sockaddr
*)&serverAddr,&addr_size))<0)
	{
		printf("\nRead Error\n");
		exit(1);
	}
	printf("%s",recvBuf);
	close(clientSock);
}
```

OUTPUT:

Server

```
[student@localhost 6]$ ./server

	SERVER: Socket Created.

	SERVER: Binded Successfully.
^C
```

Client

```
[student@localhost 6]$ ./client

      Enter number of days:
      365

      CLIENT: Socket Created.

      CLIENT: Sent.

Number of months and days converted : 12 months 5 days
[student@localhost 6]$ ./client

      Enter number of days:
      51

      CLIENT: Socket Created.

      CLIENT: Sent.

Number of months and days converted : 1 months 21 days
```