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**EXPERIMENT: 37**

**AIM:**To impement application tcp.

**PROGRAM:**

#include <stdio.h>

#include <netdb.h>

#include <netinet/in.h>

#include <stdlib.h>

#include <string.h>

#include <sys/socket.h>

#include <sys/types.h>

#include <unistd.h> // read(), write(), close()

#define MAX 80

#define PORT 8080

#define SA struct sockaddr

// Function designed for chat between client and server.

void func(int connfd)

{

char buff[MAX];

int n;

// infinite loop for chat

for (;;) {

bzero(buff, MAX);

// read the message from client and copy it in buffer

read(connfd, buff, sizeof(buff));

// print buffer which contains the client contents

printf("From client: %s\t To client : ", buff);

bzero(buff, MAX);

n = 0;

// copy server message in the buffer

while ((buff[n++] = getchar()) != '\n')

;

// and send that buffer to client

write(connfd, buff, sizeof(buff));

// if msg contains "Exit" then server exit and chat ended.

if (strncmp("exit", buff, 4) == 0) {

printf("Server Exit...\n");

break;

}

}

}

// Driver function

int main()

{

int sockfd, connfd, len;

struct sockaddr\_in servaddr, cli;

// socket create and verification

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

if (sockfd == -1) {

printf("socket creation failed...\n");

exit(0);

}

else

printf("Socket successfully created..\n");

bzero(&servaddr, sizeof(servaddr));

// assign IP, PORT

servaddr.sin\_family = AF\_INET;

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

servaddr.sin\_port = htons(PORT);

// Binding newly created socket to given IP and verification

if ((bind(sockfd, (SA\*)&servaddr, sizeof(servaddr))) != 0) {

printf("socket bind failed...\n");

exit(0);

}

else

printf("Socket successfully binded..\n");

// Now server is ready to listen and verification

if ((listen(sockfd, 5)) != 0) {

printf("Listen failed...\n");

exit(0);

}

else

printf("Server listening..\n");

len = sizeof(cli);

// Accept the data packet from client and verification

connfd = accept(sockfd, (SA\*)&cli, &len);

if (connfd < 0) {

printf("server accept failed...\n");

exit(0);

}

else

printf("server accept the client...\n");

// Function for chatting between client and server

func(connfd);

// After chatting close the socket

close(sockfd);

}

**OUTPUT:**

server

E:\nwlab>java FileServer

Sending file ... 9% complete!

Sending file ... 19% complete!

Sending file ... 28% complete!

Sending file ... 38% complete!

Sending file ... 47% complete!

Sending file ... 57% complete!

Sending file ... 66% complete!

Sending file ... 76% complete!

Sending file ... 86% complete!

Sending file ... 95% complete!

Sending file ... 100% complete!

File sent successfully!

E:\nwlab>client

E:\nwlab>java FileClient

File saved successfully!

E:\nwlab>

**RESULT:** Therefore, application using TCP file transfer has been successfully excecuted.