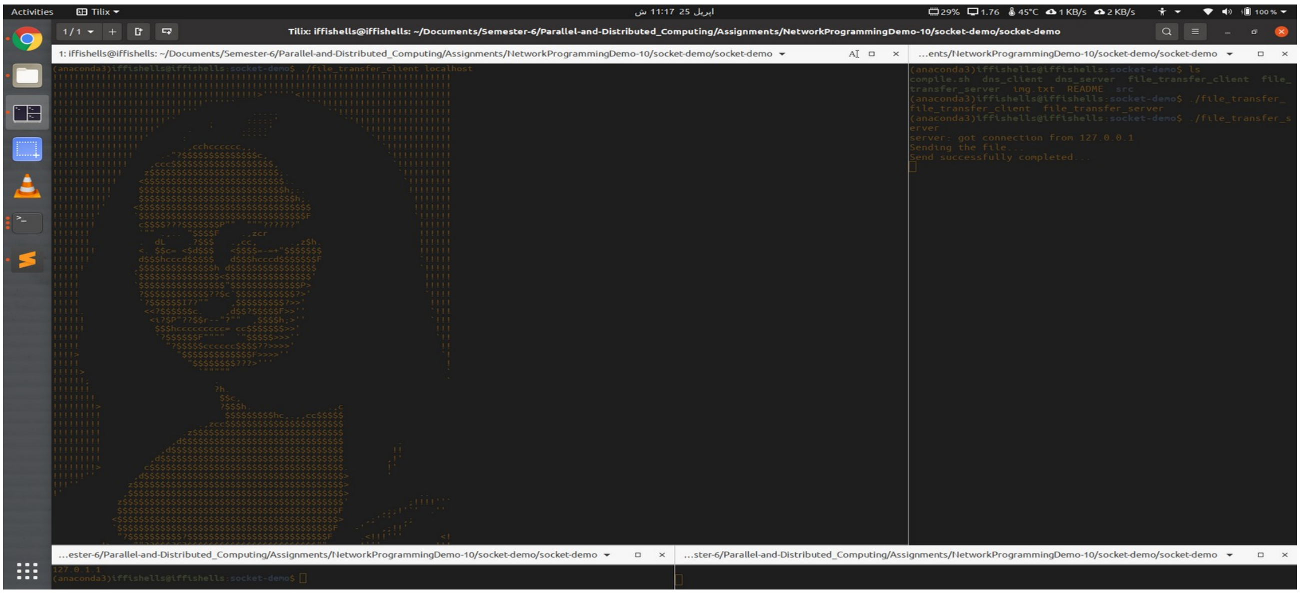
File Transfer Client output

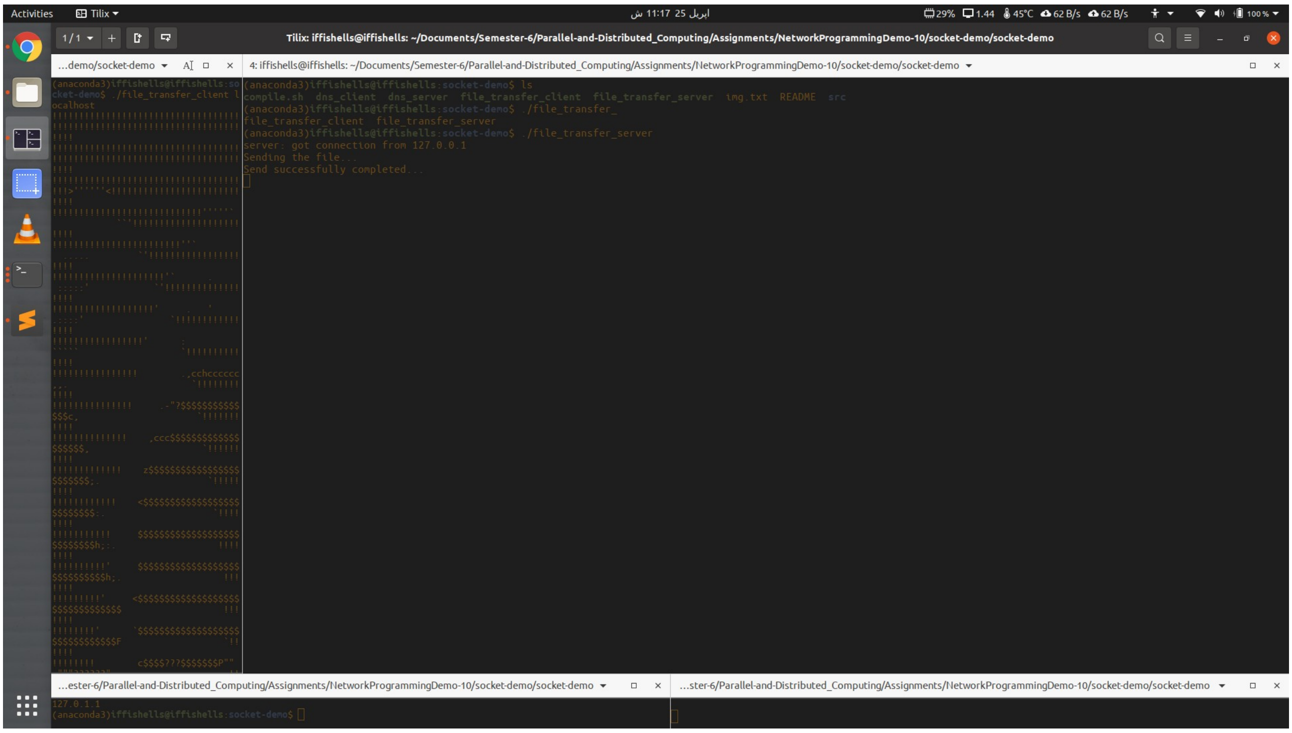


```
(anaconda3)iffishells@iffishells:socket-demo$ ./file_transfer_client localhost
```

```
(anaconda3)iffishells@iffishells:socket-demo$ ls
compile.sh  dns_client  dns_server  file_transfer_client  file_
transfer_server  img.txt  README  src
(anaconda3)iffishells@iffishells:socket-demo$ ./file_transfer_
file_transfer_client  file_transfer_server
(anaconda3)iffishells@iffishells:socket-demo$ ./file_transfer_s
erver
server: got connection from 127.0.0.1
Sending the file...
Send successfully completed...
```

```
127.0.0.1
(anaconda3)iffishells@iffishells:socket-demo$
```

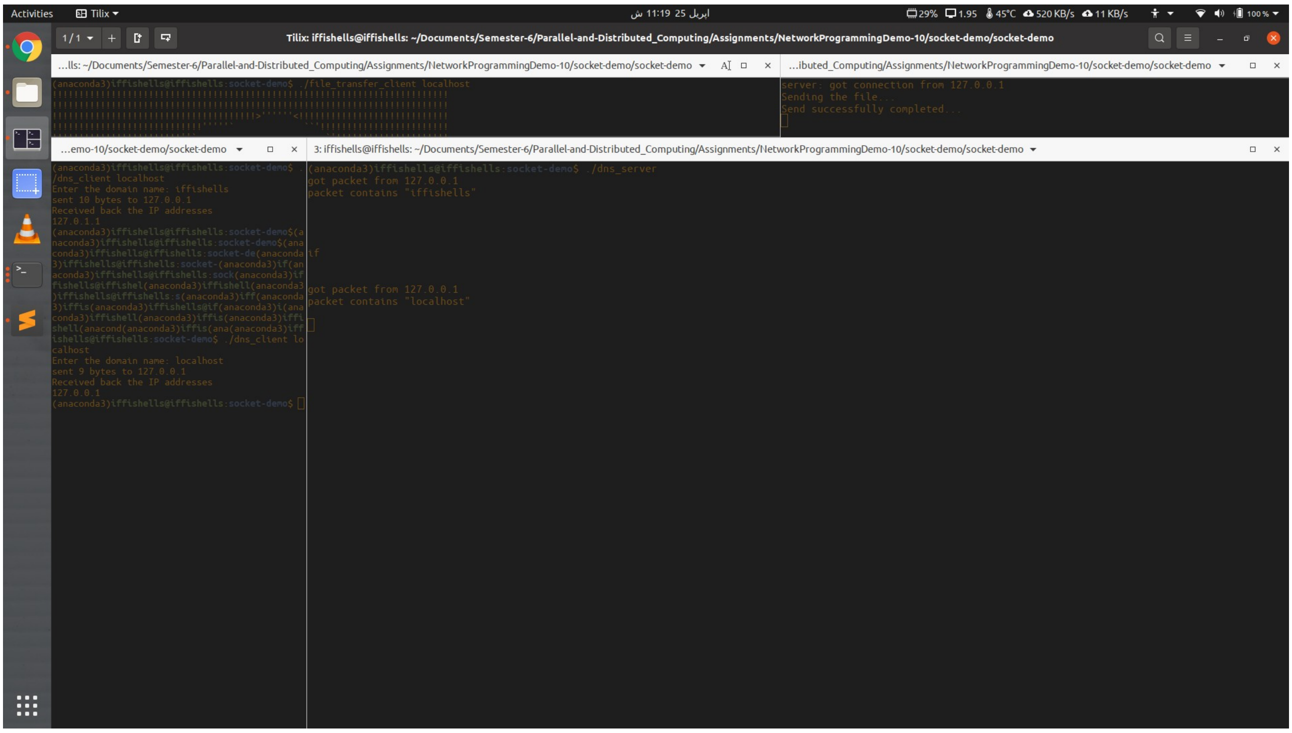
DNS Server



```
(anaconda3)iffishells@iffishells:so
cket-demo$ ./file_transfer_client l
ocalhost
```

```
(anaconda3)iffishells@iffishells:socket-demo$ ls
compile.sh  dns_client  dns_server  file_transfer_client  file_transfer_server  img.txt  README  src
(anaconda3)iffishells@iffishells:socket-demo$ ./file_transfer_
file_transfer_client  file_transfer_server
(anaconda3)iffishells@iffishells:socket-demo$ ./file_transfer_server
server: got connection from 127.0.0.1
Sending the file...
Send successfully completed...
```

```
127.0.0.1
(anaconda3)iffishells@iffishells:socket-demo$
```


Activities
Tilix
ش 11:19 25 ابریل
29%
1.95
45°C
520 KB/s
11 KB/s
100 %
1 / 1
Tilix: iffishells@iffishells: ~/Documents/Semester-6/Parallel-and-Distributed_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo
...lls: ~/Documents/Semester-6/Parallel-and-Distributed_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo
...ibuted_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo
...emo-10/socket-demo/socket-demo
3: iffishells@iffishells: ~/Documents/Semester-6/Parallel-and-Distributed_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo

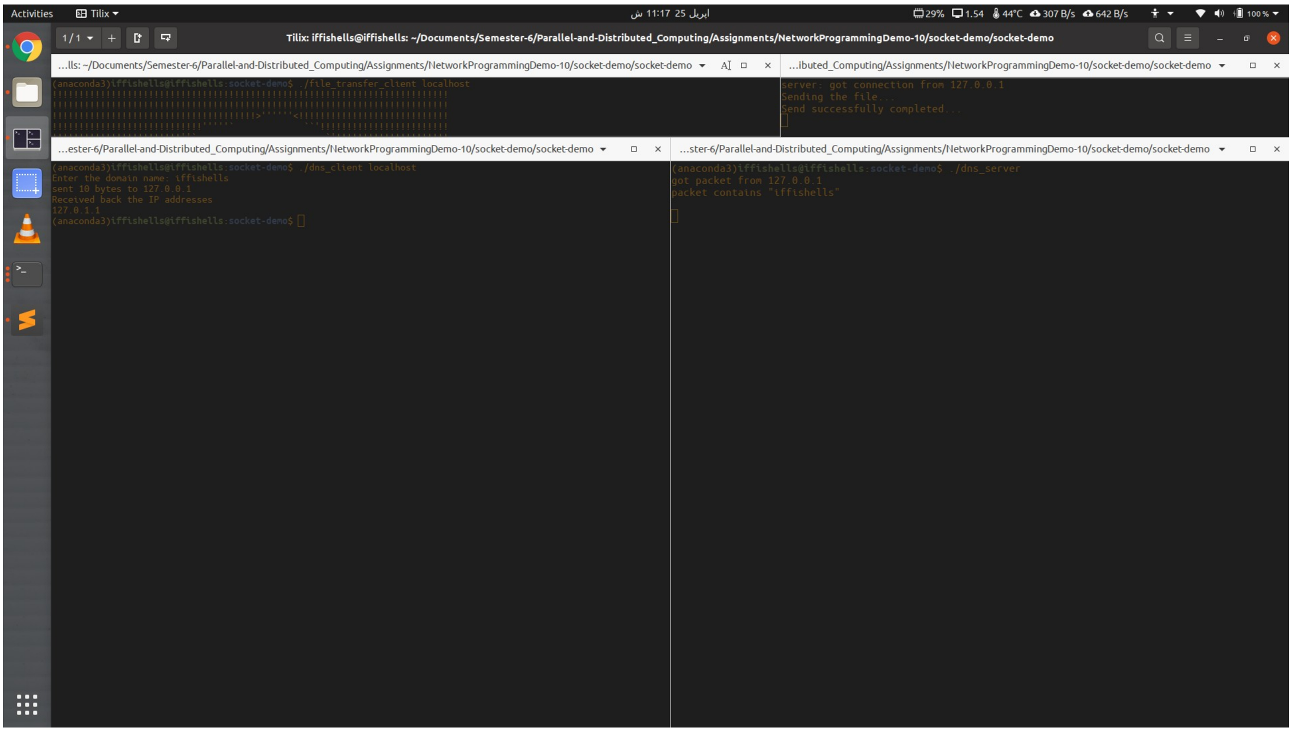
```
(anaconda3)iffishells@iffishells:socket-demo$ ./file_transfer_client localhost
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!>''''''<!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!'''''                 ``'!!!!!!!!!!!!!!!!!!!!!!!!
```

```
server: got connection from 127.0.0.1
Sending the file...
Send successfully completed...
```

```
(anaconda3)iffishells@iffishells:socket-demo$ .
/dns_client localhost
Enter the domain name: iffishells
sent 10 bytes to 127.0.0.1
Received back the IP addresses
127.0.1.1
(anaconda3)iffishells@iffishells:socket-demo$(a
naconda3)iffishells@iffishells:socket-demo$(ana
conda3)iffishells@iffishells:socket-de(anaconda
3)iffishells@iffishells:socket-(anaconda3)if(an
aconda3)iffishells@iffishells:sock(anaconda3)if
fishells@iffishel(anaconda3)iffishell(anaconda3
)iffishells@iffishells:s(anaconda3)iff(anaconda
3)iffis(anaconda3)iffishells@if(anaconda3)i(ana
conda3)iffishell(anaconda3)iffis(anaconda3)iffi
shell(anacond(anaconda3)iffis(ana(anaconda3)iff
ishells@iffishells:socket-demo$ ./dns_client lo
calhost
Enter the domain name: localhost
sent 9 bytes to 127.0.0.1
Received back the IP addresses
127.0.0.1
(anaconda3)iffishells@iffishells:socket-demo$
```

```
(anaconda3)iffishells@iffishells:socket-demo$ ./dns_server
got packet from 127.0.0.1
packet contains "iffishells"



if


got packet from 127.0.0.1
packet contains "localhost"
```

file Transfer Server

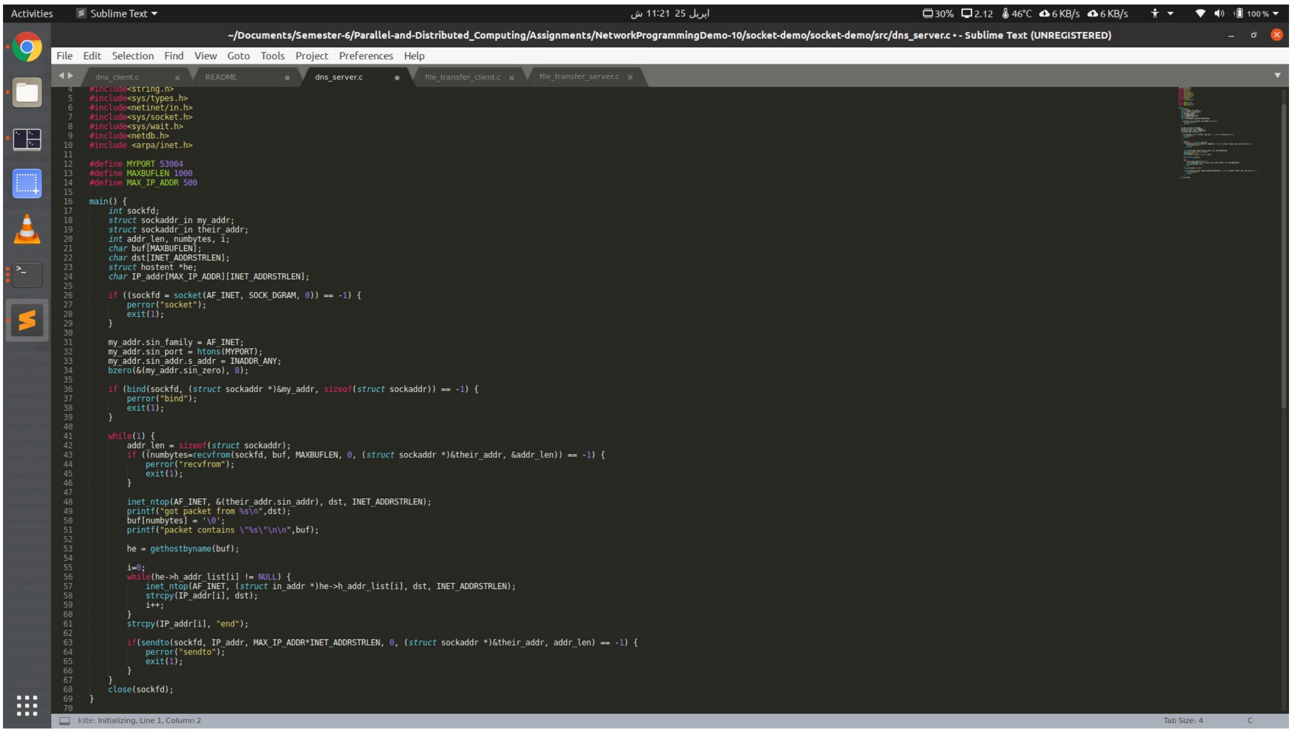

Activities
Tilix
ش 11:17 25 ابریل
29%
1.54
44°C
307 B/s
642 B/s
100 %
1 / 1
Tilix: iffishells@iffishells: ~/Documents/Semester-6/Parallel-and-Distributed_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo
...lls: ~/Documents/Semester-6/Parallel-and-Distributed_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo
...ibuted_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo
...ester-6/Parallel-and-Distributed_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo
...ster-6/Parallel-and-Distributed_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo

```
(anaconda3)iffishells@iffishells:socket-demo$ ./file_transfer_client localhost
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!>''''''<!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!'''''                 ``'!!!!!!!!!!!!!!!!!!!!!!!!
```

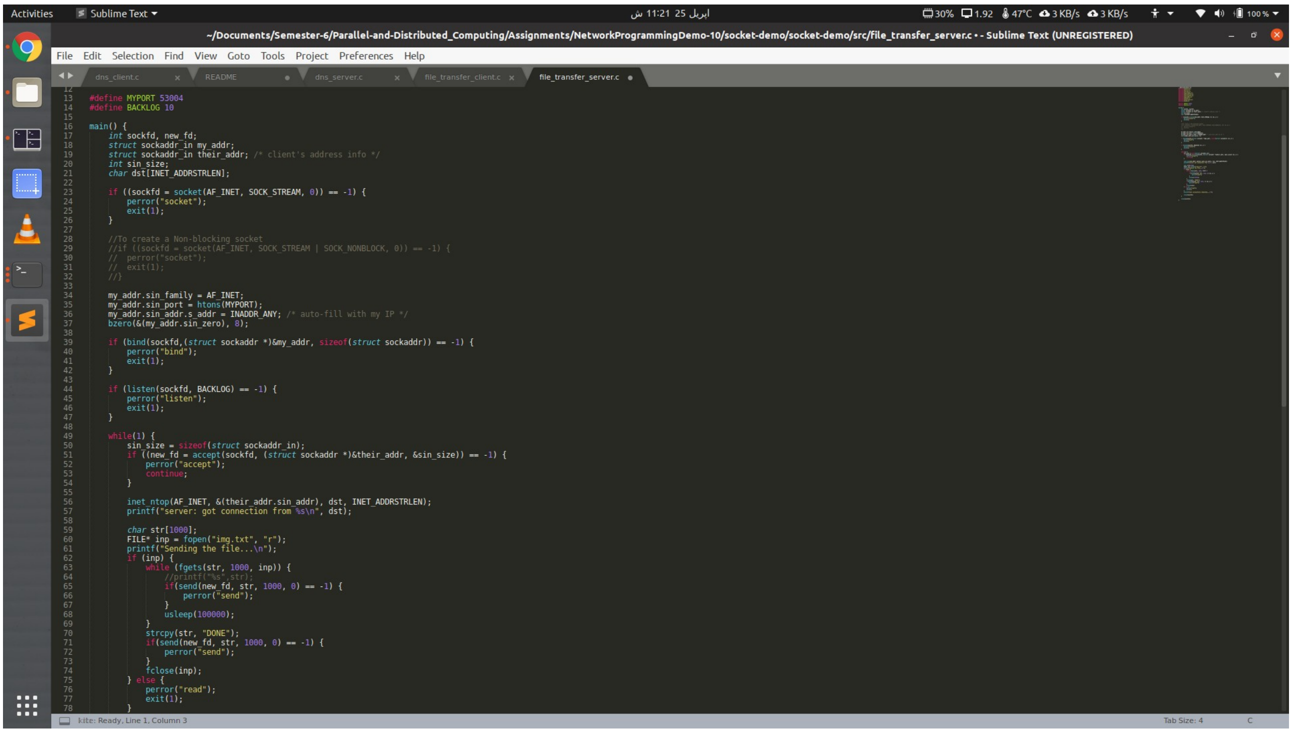
```
server: got connection from 127.0.0.1
Sending the file...
Send successfully completed...
```

```
(anaconda3)iffishells@iffishells:socket-demo$ ./dns_client localhost
Enter the domain name: iffishells
sent 10 bytes to 127.0.0.1
Received back the IP addresses
127.0.1.1
(anaconda3)iffishells@iffishells:socket-demo$
```

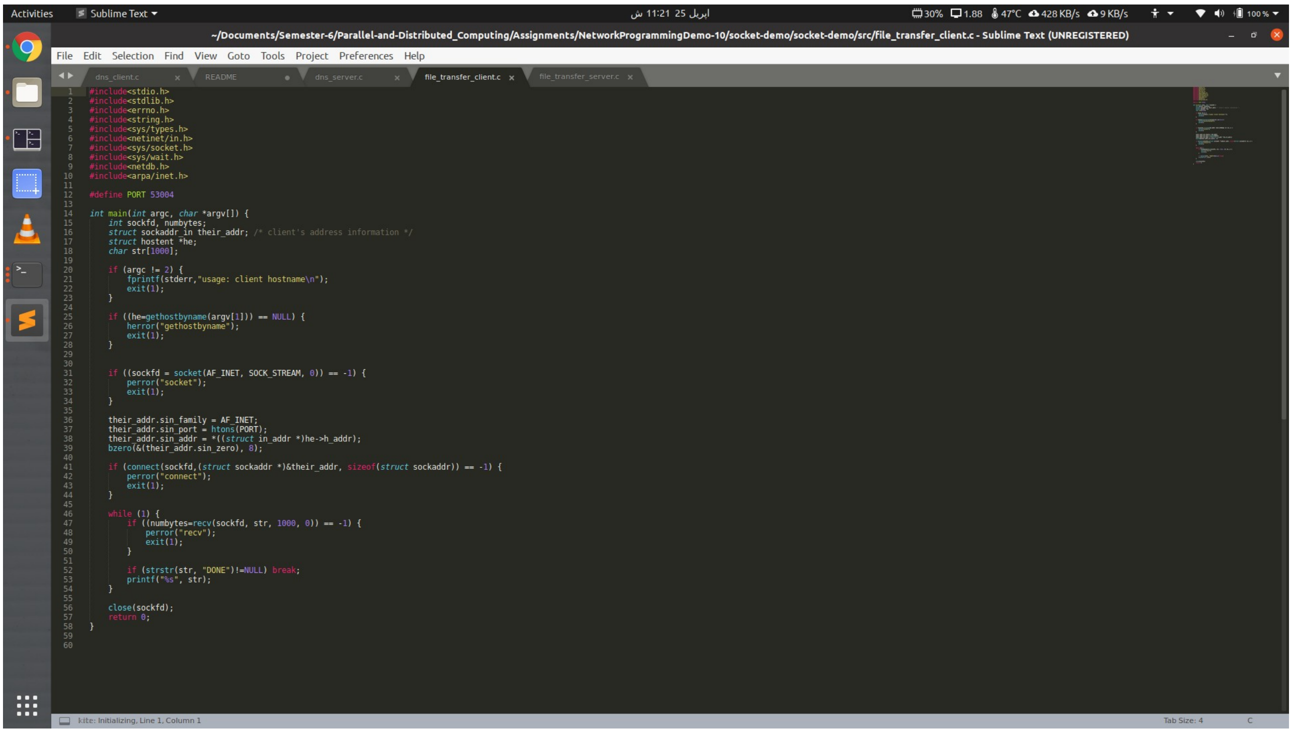
```
(anaconda3)iffishells@iffishells:socket-demo$ ./dns_server
got packet from 127.0.0.1
packet contains "iffishells"
```


Activities
Sublime Text
ش 11:21 25 اپریل
30% 2.12 46°C 6 KB/s 6 KB/s 100 %
~/Documents/Semester-6/Parallel-and-Distributed_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo/src/dns_server.c • - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
dns_client.c
README
dns_server.c
file_transfer_client.c
file_transfer_server.c
kite: Initializing, Line 1, Column 2
Tab Size: 4
C

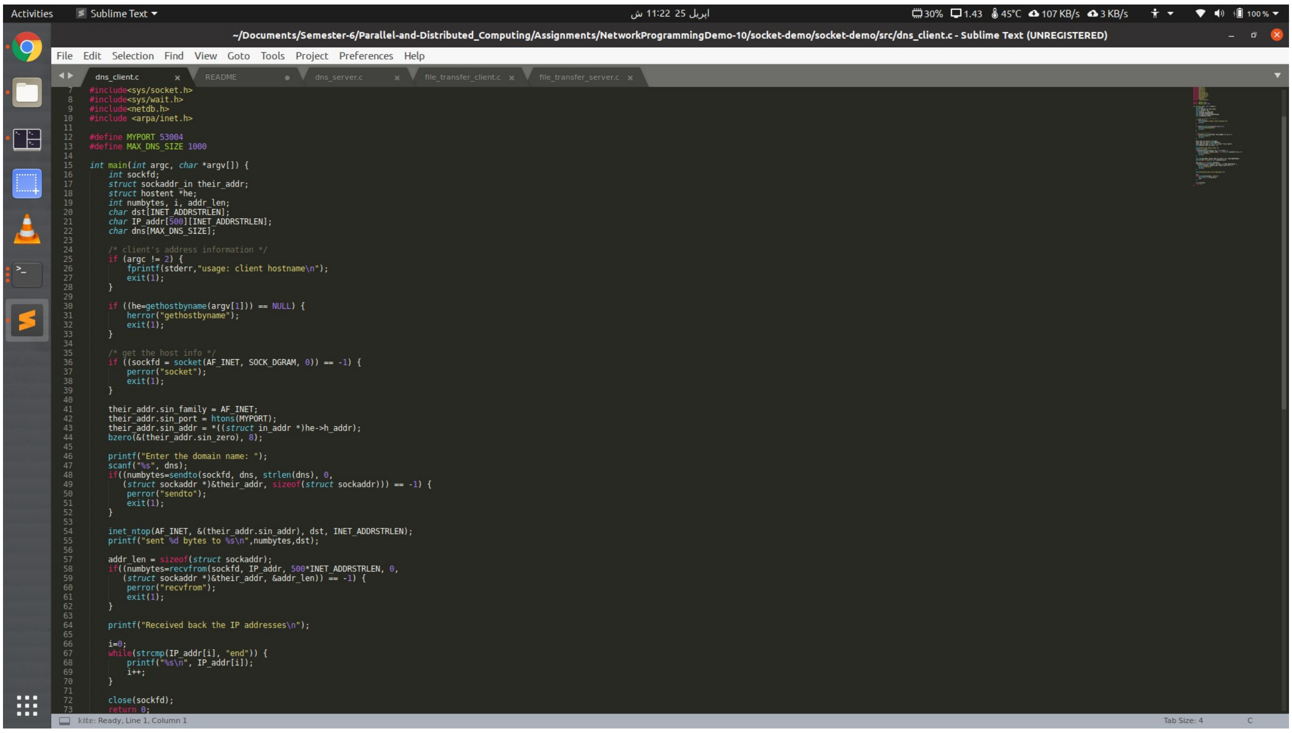
```c
#include<string.h>
#include<sys/types.h>
#include<netinet/in.h>
#include<sys/socket.h>
#include<sys/wait.h>
#include<netdb.h>
#include <arpa/inet.h>

#define MYPORT 53004
#define MAXBUFLEN 1000
#define MAX_IP_ADDR 500

main() {
    int sockfd;
    struct sockaddr_in my_addr;
    struct sockaddr_in their_addr;
    int addr_len, numbytes, i;
    char buf[MAXBUFLEN];
    char dst[INET_ADDRSTRLEN];
    struct hostent *he;
    char IP_addr[MAX_IP_ADDR][INET_ADDRSTRLEN];

    if ((sockfd = socket(AF_INET, SOCK_DGRAM, 0)) == -1) {
        perror("socket");
        exit(1);
    }

    my_addr.sin_family = AF_INET;
    my_addr.sin_port = htons(MYPORT);
    my_addr.sin_addr.s_addr = INADDR_ANY;
    bzero(&(my_addr.sin_zero), 8);

    if (bind(sockfd, (struct sockaddr *)&my_addr, sizeof(struct sockaddr)) == -1) {
        perror("bind");
        exit(1);
    }

    while(1) {
        addr_len = sizeof(struct sockaddr);
        if ((numbytes=recvfrom(sockfd, buf, MAXBUFLEN, 0, (struct sockaddr *)&their_addr, &addr_len)) == -1) {
            perror("recvfrom");
            exit(1);
        }

        inet_ntop(AF_INET, &(their_addr.sin_addr), dst, INET_ADDRSTRLEN);
        printf("got packet from %s\n",dst);
        buf[numbytes] = '\0';
        printf("packet contains \"%s\"\n\n",buf);

        he = gethostbyname(buf);

        i=0;
        while(he->h_addr_list[i] != NULL) {
            inet_ntop(AF_INET, (struct in_addr *)he->h_addr_list[i], dst, INET_ADDRSTRLEN);
            strcpy(IP_addr[i], dst);
            i++;
        }
        strcpy(IP_addr[i], "end");

        if(sendto(sockfd, IP_addr, MAX_IP_ADDR*INET_ADDRSTRLEN, 0, (struct sockaddr *)&their_addr, addr_len) == -1) {
            perror("sendto");
            exit(1);
        }
    }
    close(sockfd);
}
```


Activities
Sublime Text
ش 11:21 25 اپریل
30% 1.92 47°C 3 KB/s 3 KB/s 100 %
~/Documents/Semester-6/Parallel-and-Distributed_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo/src/file_transfer_server.c • - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
dns_client.c
README
dns_server.c
file_transfer_client.c
file_transfer_server.c
kite: Ready, Line 1, Column 3
Tab Size: 4
C

```c
#define MYPORT 53004
#define BACKLOG 10

main() {
    int sockfd, new_fd;
    struct sockaddr_in my_addr;
    struct sockaddr_in their_addr; /* client's address info */
    int sin_size;
    char dst[INET_ADDRSTRLEN];

    if ((sockfd = socket(AF_INET, SOCK_STREAM, 0)) == -1) {
        perror("socket");
        exit(1);
    }

    //To create a Non-blocking socket
    //if ((sockfd = socket(AF_INET, SOCK_STREAM | SOCK_NONBLOCK, 0)) == -1) {
    //  perror("socket");
    //  exit(1);
    //}

    my_addr.sin_family = AF_INET;
    my_addr.sin_port = htons(MYPORT);
    my_addr.sin_addr.s_addr = INADDR_ANY; /* auto-fill with my IP */
    bzero(&(my_addr.sin_zero), 8);

    if (bind(sockfd,(struct sockaddr *)&my_addr, sizeof(struct sockaddr)) == -1) {
        perror("bind");
        exit(1);
    }

    if (listen(sockfd, BACKLOG) == -1) {
        perror("listen");
        exit(1);
    }

    while(1) {
        sin_size = sizeof(struct sockaddr_in);
        if ((new_fd = accept(sockfd, (struct sockaddr *)&their_addr, &sin_size)) == -1) {
            perror("accept");
            continue;
        }

        inet_ntop(AF_INET, &(their_addr.sin_addr), dst, INET_ADDRSTRLEN);
        printf("server: got connection from %s\n", dst);

        char str[1000];
        FILE* inp = fopen("img.txt", "r");
        printf("Sending the file...\n");
        if (inp) {
            while (fgets(str, 1000, inp)) {
                //printf("%s",str);
                if(send(new_fd, str, 1000, 0) == -1) {
                    perror("send");
                }
                usleep(100000);
            }
            strcpy(str, "DONE");
            if(send(new_fd, str, 1000, 0) == -1) {
                perror("send");
            }
            fclose(inp);
        } else {
            perror("read");
            exit(1);
        }
```


Activities
Sublime Text
11:21 25 ابريل ش
~/Documents/Semester-6/Parallel-and-Distributed_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo/src/file_transfer_client.c - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
dns_client.c
README
dns_server.c
file_transfer_client.c
file_transfer_server.c
kite: Initializing, Line 1, Column 1
Tab Size: 4
C

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

#define PORT 53004

int main(int argc, char *argv[]) {
    int sockfd, numbytes;
    struct sockaddr_in their_addr; /* client's address information */
    struct hostent *he;
    char str[1000];

    if (argc != 2) {
        fprintf(stderr,"usage: client hostname\n");
        exit(1);
    }

    if ((he=gethostbyname(argv[1])) == NULL) {
        herror("gethostbyname");
        exit(1);
    }


    if ((sockfd = socket(AF_INET, SOCK_STREAM, 0)) == -1) {
        perror("socket");
        exit(1);
    }

    their_addr.sin_family = AF_INET;
    their_addr.sin_port = htons(PORT);
    their_addr.sin_addr = *((struct in_addr *)he->h_addr);
    bzero(&(their_addr.sin_zero), 8);

    if (connect(sockfd,(struct sockaddr *)&their_addr, sizeof(struct sockaddr)) == -1) {
        perror("connect");
        exit(1);
    }

    while (1) {
        if ((numbytes=recv(sockfd, str, 1000, 0)) == -1) {
            perror("recv");
            exit(1);
        }

        if (strstr(str, "DONE")!=NULL) break;
        printf("%s", str);
    }

    close(sockfd);
    return 0;
}
```


Activities
Sublime Text
11:22 25 ابريل ش
~/Documents/Semester-6/Parallel-and-Distributed_Computing/Assignments/NetworkProgrammingDemo-10/socket-demo/socket-demo/src/dns_client.c - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
dns_client.c
README
dns_server.c
file_transfer_client.c
file_transfer_server.c
kite: Ready, Line 1, Column 1
Tab Size: 4
C

```c
#include<sys/socket.h>
#include<sys/wait.h>
#include<netdb.h>
#include <arpa/inet.h>

#define MYPORT 53004
#define MAX_DNS_SIZE 1000

int main(int argc, char *argv[]) {
    int sockfd;
    struct sockaddr_in their_addr;
    struct hostent *he;
    int numbytes, i, addr_len;
    char dst[INET_ADDRSTRLEN];
    char IP_addr[500][INET_ADDRSTRLEN];
    char dns[MAX_DNS_SIZE];

    /* client's address information */
    if (argc != 2) {
        fprintf(stderr,"usage: client hostname\n");
        exit(1);
    }

    if ((he=gethostbyname(argv[1])) == NULL) {
        herror("gethostbyname");
        exit(1);
    }

    /* get the host info */
    if ((sockfd = socket(AF_INET, SOCK_DGRAM, 0)) == -1) {
        perror("socket");
        exit(1);
    }

    their_addr.sin_family = AF_INET;
    their_addr.sin_port = htons(MYPORT);
    their_addr.sin_addr = *((struct in_addr *)he->h_addr);
    bzero(&(their_addr.sin_zero), 8);

    printf("Enter the domain name: ");
    scanf("%s", dns);
    if((numbytes=sendto(sockfd, dns, strlen(dns), 0,
       (struct sockaddr *)&their_addr, sizeof(struct sockaddr))) == -1) {
        perror("sendto");
        exit(1);
    }

    inet_ntop(AF_INET, &(their_addr.sin_addr), dst, INET_ADDRSTRLEN);
    printf("sent %d bytes to %s\n",numbytes,dst);

    addr_len = sizeof(struct sockaddr);
    if((numbytes=recvfrom(sockfd, IP_addr, 500*INET_ADDRSTRLEN, 0,
       (struct sockaddr *)&their_addr, &addr_len)) == -1) {
        perror("recvfrom");
        exit(1);
    }

    printf("Received back the IP addresses\n");

    i=0;
    while(strcmp(IP_addr[i], "end")) {
        printf("%s\n", IP_addr[i]);
        i++;
    }

    close(sockfd);
    return 0;
```