Gita Alekhya Paul **13/09/2021**

Computer Networks
RA1911030010014
Experiment - 8
Implementation Of File Transfer Protocol

Aim: **To create an Implementation Of the File Transfer Protocol.**

Server Code:

```c
/**
* RA1911030010014 - FTP Server
*/
#include <sys/types.h>
#include <sys/socket.h>
#include <sys/stat.h>
#include <arpa/inet.h>
#include <netinet/in.h>
#include <netdb.h>
#include <unistd.h>
#include <stdio.h>
#include <string.h>

#define PORT 8014

int main(int argc, char *argv[])
{
   int sd, ad, size;
   struct sockaddr_in servaddr, cliaddr;
   socklen_t clilen;
   clilen = sizeof(cliaddr);
   struct stat x;
   char buff[100], file[10000];
   FILE *fp;

   bzero(&servaddr, sizeof(servaddr));
   servaddr.sin_family = AF_INET;
   servaddr.sin_addr.s_addr = htonl(INADDR_ANY);
   servaddr.sin_port = htons(PORT);

   sd = socket(AF_INET, SOCK_STREAM, 0);
   bind(sd, (struct sockaddr *)&servaddr, sizeof(servaddr));
   listen(sd, 5);
   printf("Server Is Running on Port %d\n", PORT);
   ad = accept(sd, (struct sockaddr *)&cliaddr, &clilen);
   while (1)
   {
       bzero(buff, sizeof(buff));
       bzero(file, sizeof(file));
       recv(ad, buff, sizeof(buff), 0);
       fp = fopen(buff, "r");
       stat(buff, &x);
```

```
        size = x.st_size;
        fread(file, sizeof(file), 1, fp);
        send(ad, file, sizeof(file), 0);
    }
}
```

Client Code:

```
/**
* RA1911030010014 - FTP Client
*/
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <netdb.h>
#include <stdio.h>
#include <string.h>
#include <unistd.h>

#define PORT 8014

int main(int argc, char *argv[])
{
    int sd, cd;
    struct sockaddr_in servaddr, cliaddr;
    socklen_t clilen;
    char buff[100], file[10000];
    struct hostent *h;

    h = gethostbyname(argv[1]);
    bzero(&servaddr, sizeof(servaddr));
    servaddr.sin_family = h->h_addrtype;
    memcpy((char *)&servaddr.sin_addr.s_addr, h->h_addr_list[0], h->h_length);
    servaddr.sin_port = htons(PORT);

    sd = socket(AF_INET, SOCK_STREAM, 0);
    cd = connect(sd, (struct sockaddr *)&servaddr, sizeof(servaddr));

    while (1)
    {
        printf("%s\n", "Enter the File Name:");
        scanf("%s", buff);
        send(sd, buff, strlen(buff) + 1, 0);
        printf("%s\n", "File Output :");
        recv(sd, file, sizeof(file), 0);
        printf("%s\n", file);
    }
    return 0;
}
```

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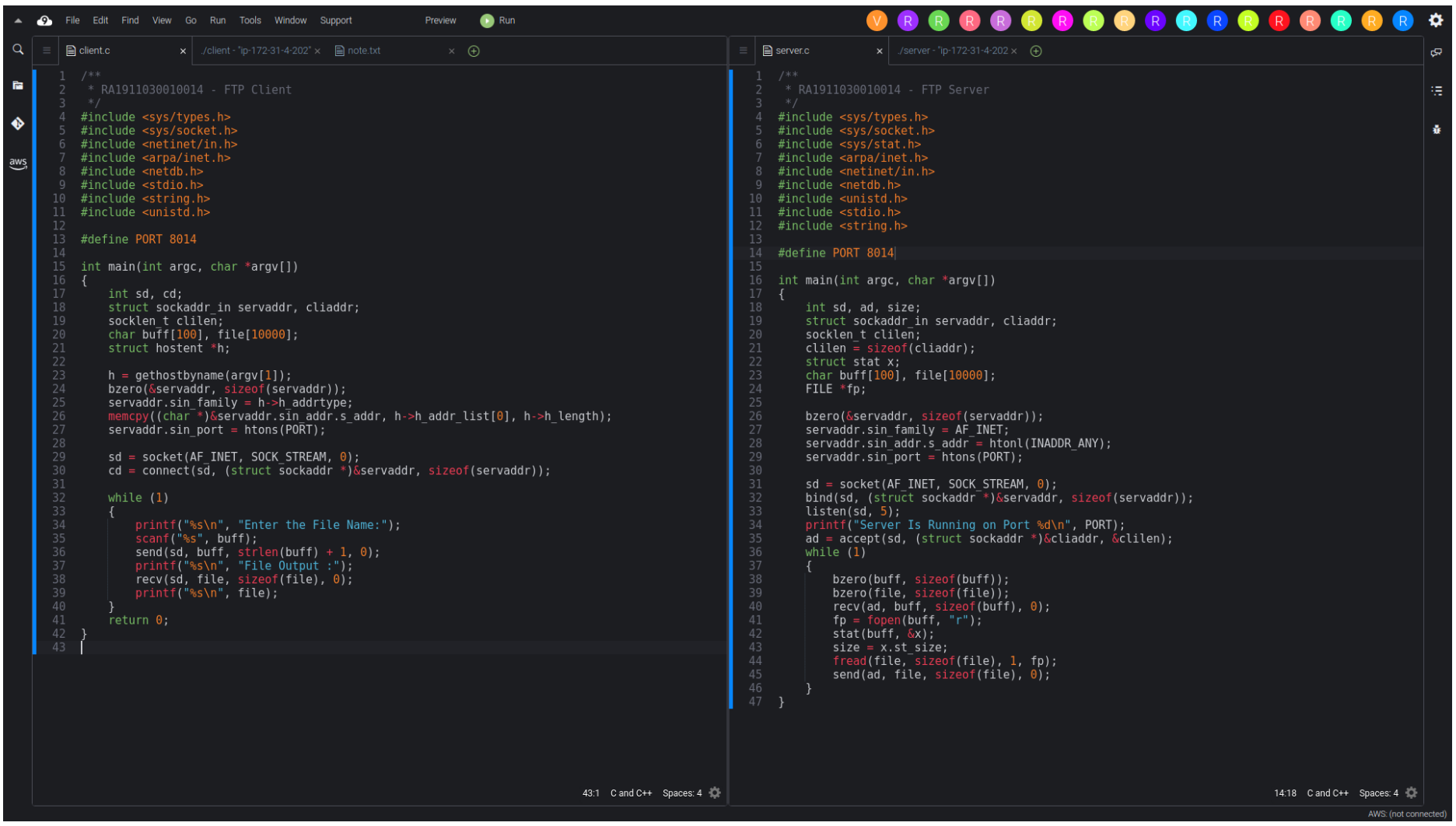
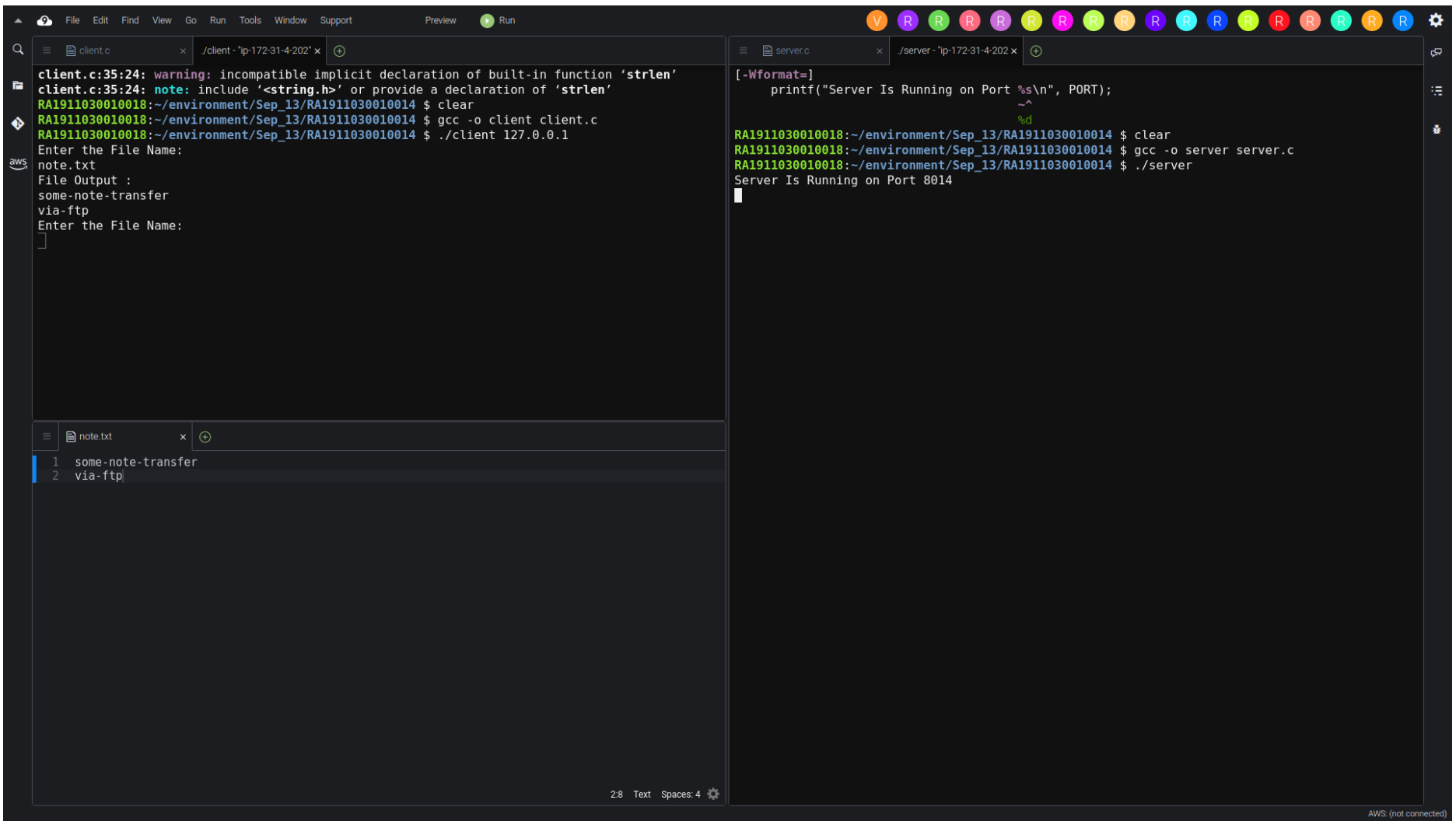
Output:





Result:

The required code for the Implementation Of File Transfer Protocol was written in the AWS Cloud9 environment and successfully compiled.