Distributed Systems

letronghoang00 kiendeptrai1234

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1 How you design your protocol

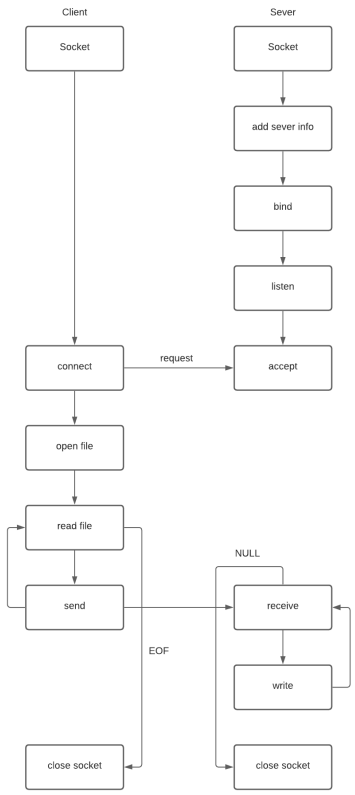

Figure 1: The Protocol

2 How you organize your system

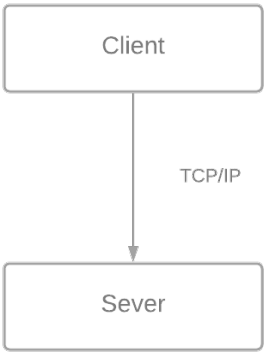

Figure 2: System design

The Client send data to the Sever. After receiving the data the Sever writes it to a file. Then when finish, the Sever close itself.

3 How you implement the file transfer

In file_client.c, the function to send file is implemented as followed

```
void send_file(FILE *fp, int sockfd){
  int n;
  char data[SIZE] = {0};

  while(fgets(data, SIZE, fp) != NULL) {
    if (send(sockfd, data, sizeof(data), 0) == -1) {
      perror("[-]Error in sending file.");
      exit(1);
    }
    bzero(data, SIZE);
  }
}
```

In file_server.c, the function to write file is implemented as followed

```c
void write_file(int sockfd){
  int n;
  FILE *fp;
  char *filename = "recv.txt";
  char buffer[SIZE];

  fp = fopen(filename, "w");
  while (1) {
    n = recv(sockfd, buffer, SIZE, 0);
    if (n <= 0){
      break;
      return;
    }
    fprintf(fp, "%s", buffer);
    bzero(buffer, SIZE);
  }
  return;
}
```