Assignment 6

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Excercise 1

Complete a basic Socket program based on PDF p. 41, and execute it as shown on p. 45.

```
$ ./client 172.21.39.31 8888
==> hello
<== hello

==> aaa
<== aaa
```

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <sys/socket.h>
#include <sys/types.h>
#include <netinet/in.h>
#include <arpa/inet.h>

int main(int argc, char *argv[]){
  int sockfd,len;
  char buf[BUFSIZ];
  struct sockaddr_in serv;
  int port;
  if(argc != 3){
    printf("Usage: ./prog host port \n");
    exit(1);
  }
  if((sockfd = socket(PF_INET,SOCK_STREAM,0)) < 0){
    perror("Socket\n");
    exit(1);
  }
  serv.sin_family = PF_INET;
  port = strtol(argv[2],NULL,10);
  serv.sin_port = htons(port);
  inet_aton(argv[1],&serv.sin_addr);

  if(connect(sockfd,(struct sockaddr *)&serv,sizeof(serv)) < 0){
    perror("Connect\n");
```

```
    exit(1);
  }

  while(strncasecmp(buf,"exit\n",5) != 0){
    printf("==>");
    if((fgets(buf,BUFSIZ,stdin)) == NULL){
      perror("fgets\n");
    }
    len = send(sockfd,buf,strlen(buf),0);
    //printf("%d\n",len);
    len = recv(sockfd,buf,len,0);
    buf[len] = '\0';
    printf("<== %s\n",buf);
  }
  close(sockfd);
  return 0;
}
```

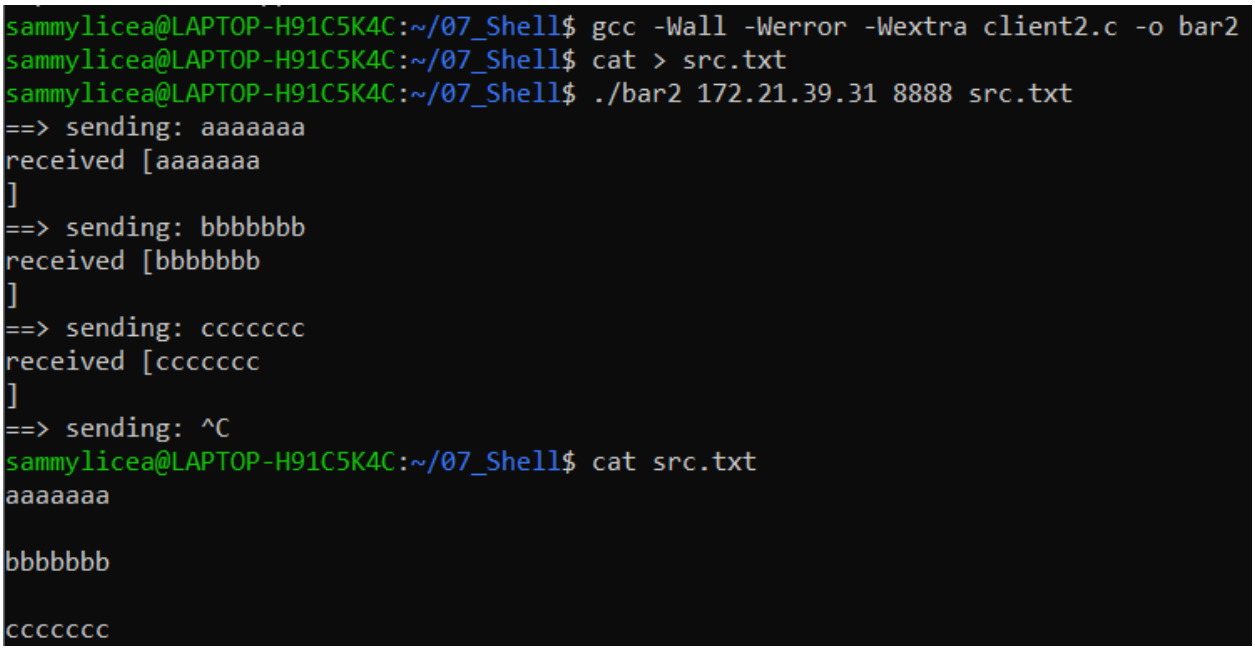
```
sammylicea@LAPTOP-H91C5K4C:~/07_Shell$ gcc -Wall -Werror -Wextra client.c -o bar
sammylicea@LAPTOP-H91C5K4C:~/07_Shell$ ./bar 172.21.39.31 8888
==>hello
<== hello

==>aaa
<== aaa

==>homework
<== homework
```

Excercise 2

Extend the program above and transfer the contents of the variable length file.

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <sys/socket.h>
#include <sys/types.h>
#include <netinet/in.h>
#include <arpa/inet.h>

int main(int argc, char *argv[]){
  int sockfd,len;
  char buf[BUFSIZ];
  char *filename = argv[3];
  struct sockaddr_in serv;
  int port;
  if(argc != 4){
```

```
    printf("Not enough parameters \n");
    exit(1);
  }
  if((sockfd = socket(PF_INET,SOCK_STREAM,0)) < 0){
    perror("Socket\n");
    exit(1);
  }
  serv.sin_family = PF_INET;
  port = strtol(argv[2],NULL,10);
  serv.sin_port = htons(port);
  inet_aton(argv[1],&serv.sin_addr);

  if(connect(sockfd,(struct sockaddr *)&serv,sizeof(serv)) < 0){
    perror("Connect\n");
    exit(1);
  }

  while(strncasecmp(buf,"exit\n",5) != 0){
    printf("==> sending: ");
    if((fgets(buf,BUFSIZ,stdin)) == NULL){
      perror("fgets\n");
    }
    len = send(sockfd,buf,strlen(buf),0);
    FILE *fp = fopen(filename,"a");

    if(fp == NULL){
      printf("Error opening file %s\n",filename);
      return -1;
    }
    //printf("%d\n",len);
    len = recv(sockfd,buf,len,0);
    buf[len] = '\0';
    for(int i = 0;i<len;i++){
      fputc(buf[i],fp);
    }
    fputc('\n',fp);
    printf("received [%s]\n",buf);
    fclose(fp);
  }
  close(sockfd);
  return 0;
}
```


sammylicea@LAPTOP-H91C5K4C:~/07_Shell$ gcc -Wall -Werror -Wextra client2.c -o bar2
sammylicea@LAPTOP-H91C5K4C:~/07_Shell$ cat > src.txt
sammylicea@LAPTOP-H91C5K4C:~/07_Shell$ ./bar2 172.21.39.31 8888 src.txt
==> sending: aaaaaaa
received [aaaaaaa
]
==> sending: bbbbbbb
received [bbbbbbb
]
==> sending: ccccccc
received [ccccccc
]
==> sending: ^C
sammylicea@LAPTOP-H91C5K4C:~/07_Shell$ cat src.txt
aaaaaaa
bbbbbbb
ccccccc