client.c

```c
#include <sys/types.h>
#include <sys/socket.h>
#include <stdio.h>
#include <sys/un.h>
#include <unistd.h>
#include <stdlib.h>
int main(){
    int sockfd;
    int len;
    struct sockaddr_un address;
    int result;
    char ch;
        int arr[100];
        printf("Enter the number of integers : ");
        scanf("%d",&arr[0]);
        printf(" Enter the integers : ");
        for(int i=1; i<=arr[0]; i++)
          scanf("%d",&arr[i]);
          int flag=0;
          for(int i=1;i<=arr[0];i++){
              for(int j=1;j<=arr[0];j++){
                  if(arr[i]==arr[j] && i!=j){
                          flag=1;
                          break;}}
                if(flag==1){
                break;}}
          if(flag==1){
                printf("ERROR duplicate elements\n");
                exit(1);}
        sockfd = socket(AF_UNIX, SOCK_STREAM, 0);
        address.sun_family = AF_UNIX;
        strcpy(address.sun_path, "server_socket");
        len = sizeof(address);
        result = connect(sockfd, (struct sockaddr *)&address, len);
    if(result == -1) {
        perror("oops: client1");
        exit(1);}
write(sockfd, arr, 400);
read(sockfd, arr, 400);
//read and write via sockfd
//printf("char from server = %c\n", ch);
printf(" \nSorted array of integers : ");
for(int i=1; i<=arr[0]; i++)
    printf("%d ", arr[i]);
close(sockfd);
// close the socket connection
exit(0);
}
```

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#include <sys/types.h>
#include <sys/socket.h>
#include <stdio.h>
#include <sys/un.h>
#include <unistd.h>
#include <stdlib.h>
void swap(int *xp, int *yp){int temp = *xp;*xp = *yp;*yp = temp;}
void bubbleSort(int arr[], int n){
    int i, j;
    for (i = 0; i < n-1; i++)
        for (j = 0; j < n-i-1; j++)
            if (arr[j] > arr[j+1])
                swap(&arr[j], &arr[j+1]);}
int main(){
    int server_sockfd, client_sockfd;
    int server_len, client_len;
    struct sockaddr_un server_address;
    struct sockaddr_un client_address;
    unlink("server_socket");
    server_sockfd = socket(AF_UNIX, SOCK_STREAM, 0)
    server_address.sun_family = AF_UNIX;
    strcpy(server_address.sun_path, "server_socket");
    server_len = sizeof(server_address);
    bind(server_sockfd, (struct sockaddr *)&server_address,
server_len);
    listen(server_sockfd, 5);
    while(1) {
        int arr[100];
        printf("\nserver waiting\n");
        client_len = sizeof(client_address);
        client_sockfd = accept(server_sockfd,(struct sockaddr
*)&client_address, &client_len);
        read(client_sockfd, arr, 400);
        int flag=0;
        for(int i=1;i<=arr[0];i++){
            for(int j=1;j<=arr[0];j++){
                if(arr[i]==arr[j] && i!=j){flag=1;break;}}
                if(flag==1){
                break;}}
        if(flag==1){
            printf("ERROR duplicate elements\n");exit(1);}
        else if(arr[0]>=2)
            bubbleSort(arr+1,arr[0]);
            for(int i=1; i<=arr[0]; i++)
                printf("%d ", arr[i]);
        write(client_sockfd, arr, 400);}
        else
            printf("ERROR");
        close(client_sockfd);}}
```

Left terminal:

```
intel@intel-HP-Notebook:~/Documents/network_lab/exp_2a$ gcc client.c -o cl
ient.o && ./client.o
client.c: In function 'main':
client.c:21:3: warning: implicit declaration of function 'write'; did you
mean 'fwrite'? [-Wimplicit-function-declaration]
   21 |   write(sid, ip_addr, strlen(ip_addr)); // writing to the file soc
ket
      |   ^~~~~
      |   fwrite
client.c:25:4: warning: implicit declaration of function 'close'; did you
mean 'pclose'? [-Wimplicit-function-declaration]
   25 |    close(sid);
      |    ^~~~~
      |    pclose
client.c:30:3: warning: implicit declaration of function 'read'; did you m
ean 'fread'? [-Wimplicit-function-declaration]
   30 |   read(sid, &server_output, 1);
      |   ^~~~
      |   fread
Connected to Server.(enter end to exit)
Enter the IPV4 Address: 127.0.0.1
Sending IPV4 Address to be validated.....
Given IP is a valid IPV4_Address.
Enter the IPV4 Address: 
```

Right terminal:

```
intel@intel-HP-Notebook:~/Documents/network_lab/exp_2a$ gcc server.c -o se
rver.o && ./server.o
server.c: In function 'main':
server.c:67:2: warning: implicit declaration of function 'unlink' [-Wimpli
cit-function-declaration]
   67 |  unlink("FileSocket");
      |  ^~~~~~
server.c:77:3: warning: implicit declaration of function 'read'; did you m
ean 'fread'? [-Wimplicit-function-declaration]
   77 |   read(cid, ip_addr, 16);
      |   ^~~~
      |   fread
server.c:80:4: warning: implicit declaration of function 'close'; did you
mean 'pclose'? [-Wimplicit-function-declaration]
   80 |    close(cid);
      |    ^~~~~
      |    pclose
server.c:97:3: warning: implicit declaration of function 'write'; did you
mean 'fwrite'? [-Wimplicit-function-declaration]
   97 |   write(cid, out, 1);
      |   ^~~~~
      |   fwrite

Server started. Waiting for connection....
Connection Accepted. Obtaining Inputs....
127.0.0.1
Sending back reply: Y
```