CS3205 NETWORKS

ASSIGNMENT1

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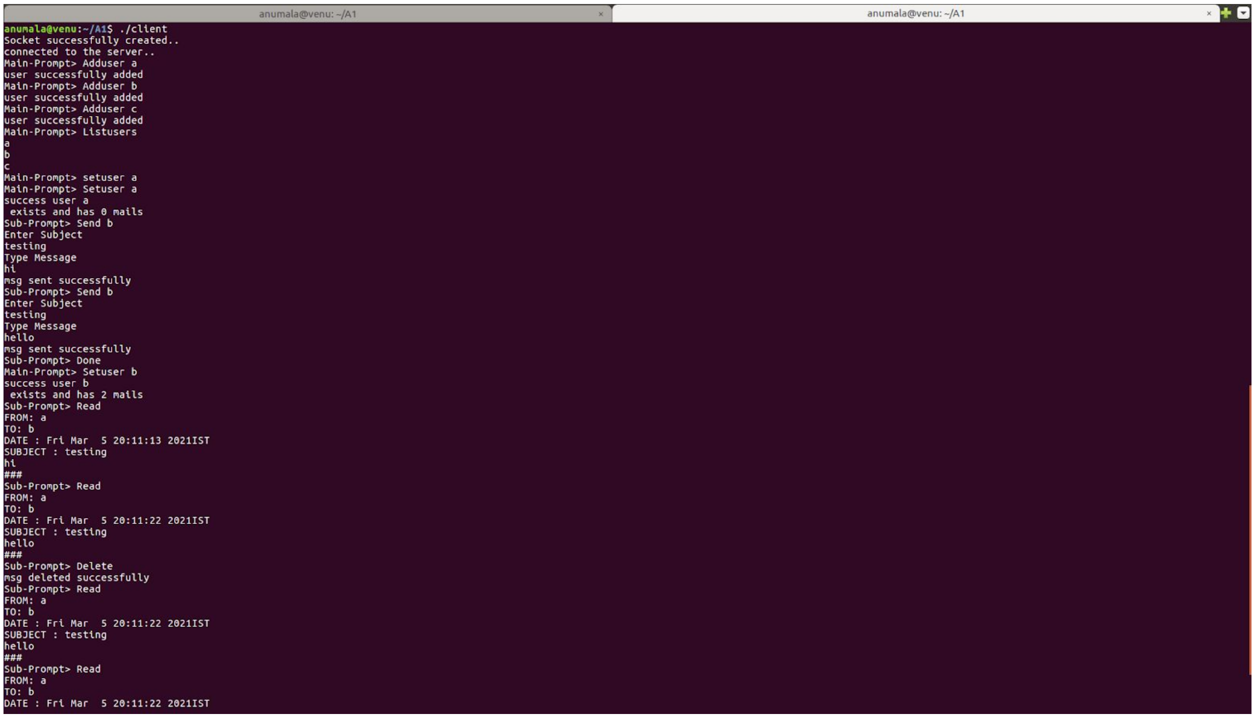
CS18B051 Report for Networks CS3205 assignment 1

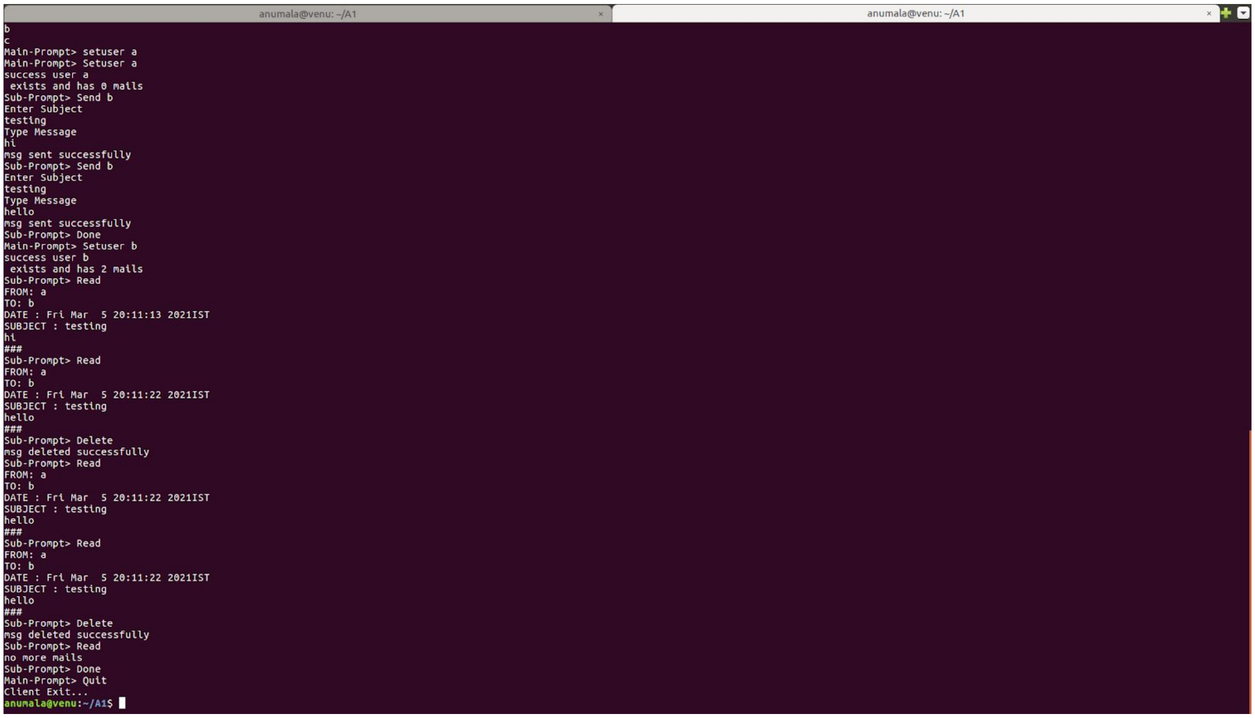
Session 1:

Here is a one of the session screenshot of client terminal . This is a session after everything is implemented .



```
anumala@venu:~/A1$ ./client
Socket successfully created..
connected to the server..
Main-Prompt> Adduser a
user successfully added
Main-Prompt> Adduser b
user successfully added
Main-Prompt> Adduser c
user successfully added
Main-Prompt> Listusers
a
b
c
Main-Prompt> setuser a
Main-Prompt> Setuser a
success user a
 exists and has 0 mails
Sub-Prompt> Send b
Enter Subject
testing
Type Message
hi
msg sent successfully
Sub-Prompt> Send b
Enter Subject
testing
Type Message
hello
msg sent successfully
Sub-Prompt> Done
Main-Prompt> Setuser b
success user b
 exists and has 2 mails
Sub-Prompt> Read
FROM: a
TO: b
DATE : Fri Mar  5 20:11:13 2021IST
SUBJECT : testing
hi
###
Sub-Prompt> Read
FROM: a
TO: b
DATE : Fri Mar  5 20:11:22 2021IST
SUBJECT : testing
hello
###
Sub-Prompt> Delete
msg deleted successfully
Sub-Prompt> Read
FROM: a
TO: b
DATE : Fri Mar  5 20:11:22 2021IST
SUBJECT : testing
hello
###
Sub-Prompt> Read
FROM: a
TO: b
DATE : Fri Mar  5 20:11:22 2021IST
```

This is 1st part of screenshot



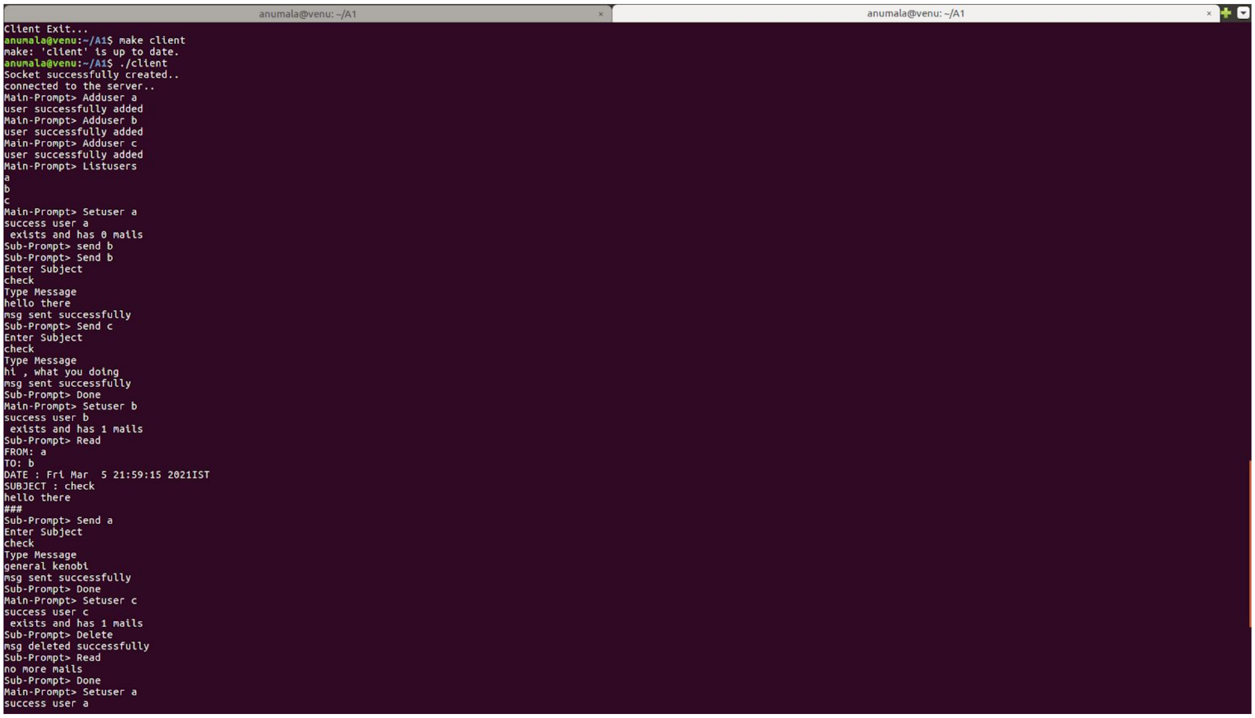
```
b
c
Main-Prompt> setuser a
Main-Prompt> Setuser a
success user a
 exists and has 0 mails
Sub-Prompt> Send b
Enter Subject
testing
Type Message
hi
msg sent successfully
Sub-Prompt> Send b
Enter Subject
testing
Type Message
hello
msg sent successfully
Sub-Prompt> Done
Main-Prompt> Setuser b
success user b
 exists and has 2 mails
Sub-Prompt> Read
FROM: a
TO: b
DATE : Fri Mar  5 20:11:13 2021IST
SUBJECT : testing
hi
###
Sub-Prompt> Read
FROM: a
TO: b
DATE : Fri Mar  5 20:11:22 2021IST
SUBJECT : testing
hello
###
Sub-Prompt> Delete
msg deleted successfully
Sub-Prompt> Read
FROM: a
TO: b
DATE : Fri Mar  5 20:11:22 2021IST
SUBJECT : testing
hello
###
Sub-Prompt> Read
FROM: a
TO: b
DATE : Fri Mar  5 20:11:22 2021IST
SUBJECT : testing
hello
###
Sub-Prompt> Delete
msg deleted successfully
Sub-Prompt> Read
no more mails
Sub-Prompt> Done
Main-Prompt> Quit
Client Exit...
anumala@venu:~/A1$ 
```

This is 2nd part of that screenshot.

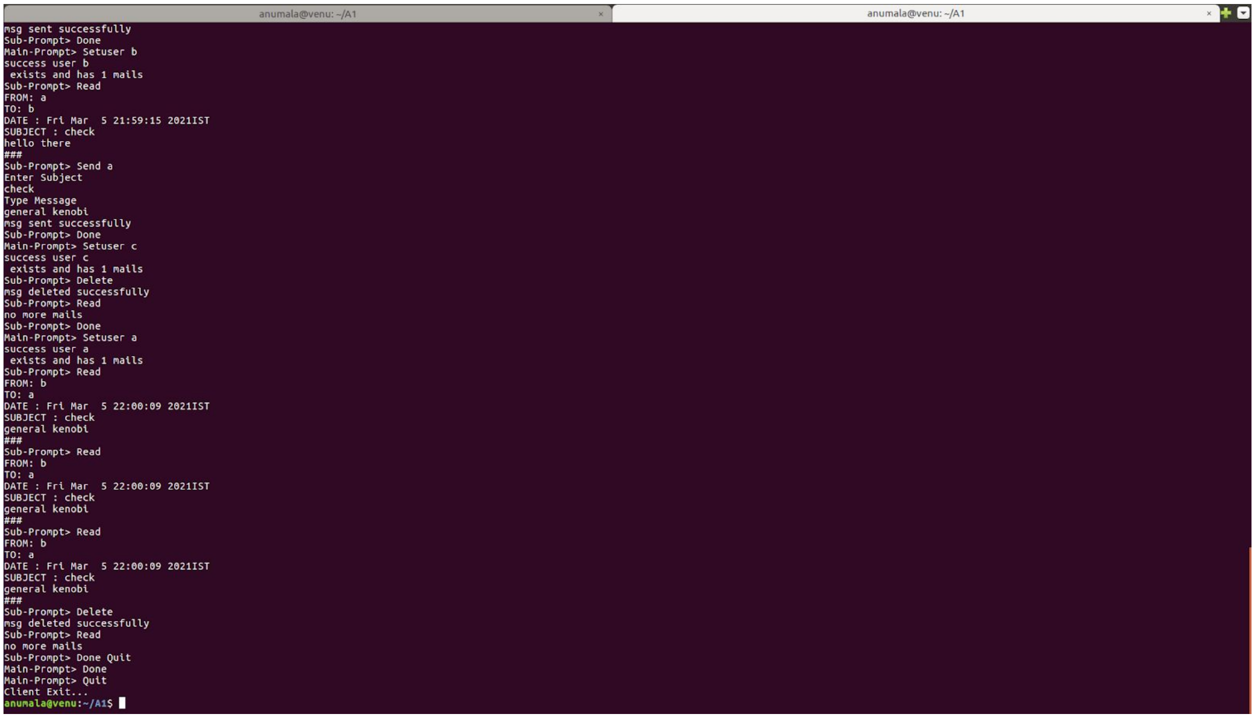
This can help in testing for Tas .

SESSION 2 :

Here are 2 screenshots of client terminal output after full implementation



```
Client Exit...
anumala@venu:~/A1$ make client
make: 'client' is up to date.
anumala@venu:~/A1$ ./client
Socket successfully created..
connected to the server..
Main-Prompt> Adduser a
user successfully added
Main-Prompt> Adduser b
user successfully added
Main-Prompt> Adduser c
user successfully added
Main-Prompt> Listusers
a
b
c
Main-Prompt> Setuser a
success user a
 exists and has 0 mails
Sub-Prompt> send b
Sub-Prompt> Send b
Enter Subject
check
Type Message
hello there
msg sent successfully
Sub-Prompt> Send c
Enter Subject
check
Type Message
hi , what you doing
msg sent successfully
Sub-Prompt> Done
Main-Prompt> Setuser b
success user b
 exists and has 1 mails
Sub-Prompt> Read
FROM: a
TO: b
DATE : Fri Mar  5 21:59:15 2021IST
SUBJECT : check
hello there
###
Sub-Prompt> Send a
Enter Subject
check
Type Message
general kenobi
msg sent successfully
Sub-Prompt> Done
Main-Prompt> Setuser c
success user c
 exists and has 1 mails
Sub-Prompt> Delete
msg deleted successfully
Sub-Prompt> Read
no more mails
Sub-Prompt> Done
Main-Prompt> Setuser a
success user a
```



```
msg sent successfully
Sub-Prompt> Done
Main-Prompt> Setuser b
success user b
 exists and has 1 mails
Sub-Prompt> Read
FROM: a
TO: b
DATE : Fri Mar  5 21:59:15 2021IST
SUBJECT : check
hello there
###
Sub-Prompt> Send a
Enter Subject
check
Type Message
general kenobi
msg sent successfully
Sub-Prompt> Done
Main-Prompt> Setuser c
success user c
 exists and has 1 mails
Sub-Prompt> Delete
msg deleted successfully
Sub-Prompt> Read
no more mails
Sub-Prompt> Done
Main-Prompt> Setuser a
success user a
 exists and has 1 mails
Sub-Prompt> Read
FROM: b
TO: a
DATE : Fri Mar  5 22:00:09 2021IST
SUBJECT : check
general kenobi
###
Sub-Prompt> Read
FROM: b
TO: a
DATE : Fri Mar  5 22:00:09 2021IST
SUBJECT : check
general kenobi
###
Sub-Prompt> Read
FROM: b
TO: a
DATE : Fri Mar  5 22:00:09 2021IST
SUBJECT : check
general kenobi
###
Sub-Prompt> Delete
msg deleted successfully
Sub-Prompt> Read
no more mails
Sub-Prompt> Done Quit
Main-Prompt> Done
Main-Prompt> Quit
Client Exit...
anumala@venu:~/A1$
```

Learning outcomes:

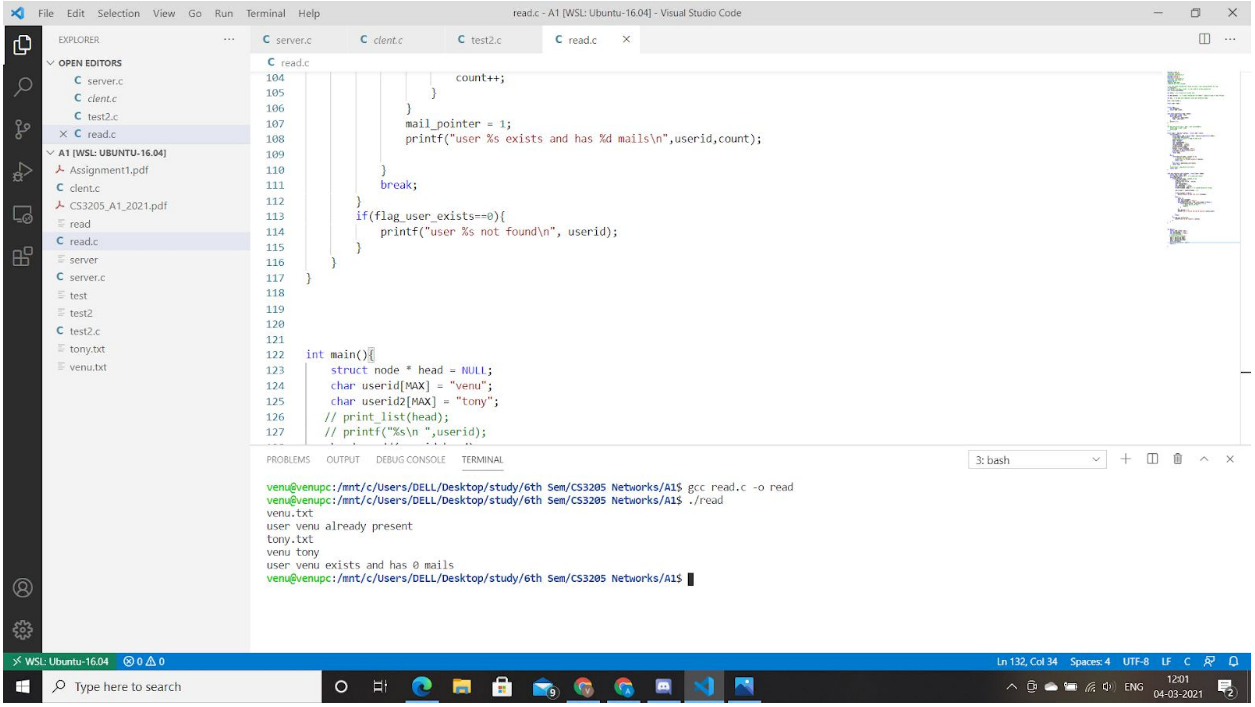
The experiment seemed tough at the start , but as I spent time on it , I understand what tcp socket is doing and how server and client are

communicating . the experiment is very good , i liked it . i feel like with good ideas we can do much better things like saving a mail as a draft , if we left in the middle of sending.
Overall the assignment was fun.

My approach for this assignment:

1) Implementing COMMAND PROCESSOR

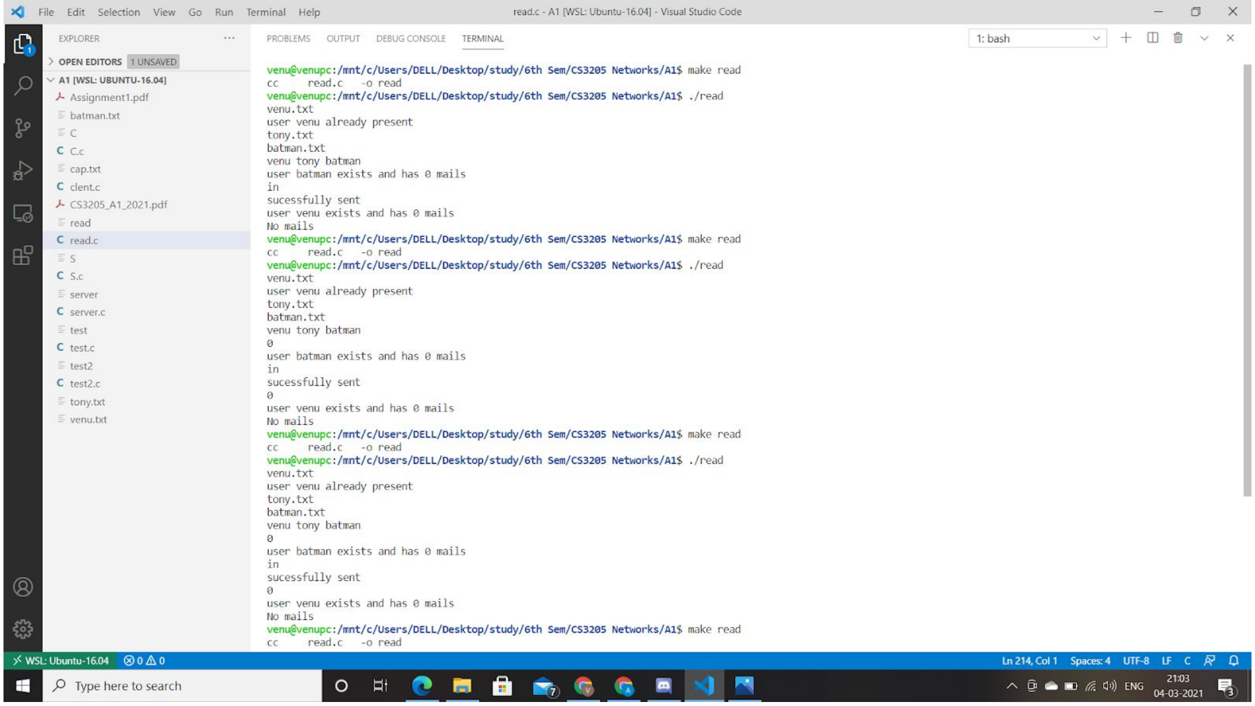
I first did server COMMAND processor first without any network interface and tested all the functions with a main written by me .
Below is a screenshot of checking adduser listusers and setuser.



```c
                        count++;
                    }
                }
                mail_pointer = 1;
                printf("user %s exists and has %d mails\n",userid,count);

            }
            break;
        }
        if(flag_user_exists==0){
            printf("user %s not found\n", userid);
        }
    }
}




int main(){
    struct node * head = NULL;
    char userid[MAX] = "venu";
    char userid2[MAX] = "tony";
   // print_list(head);
   // printf("%s\n ",userid);
```

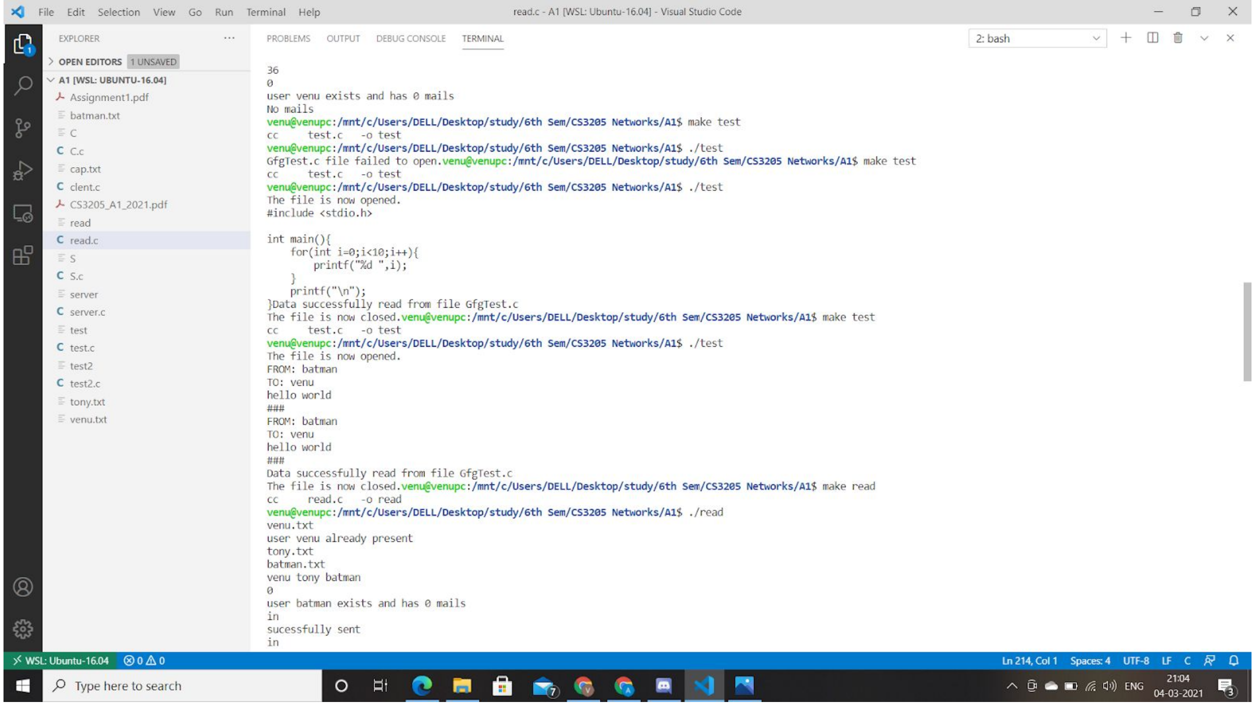
```
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ gcc read.c -o read
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ ./read
venu.txt
user venu already present
tony.txt
venu tony
user venu exists and has 0 mails
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$
```

Below is a screenshot of output for checking send userid msg

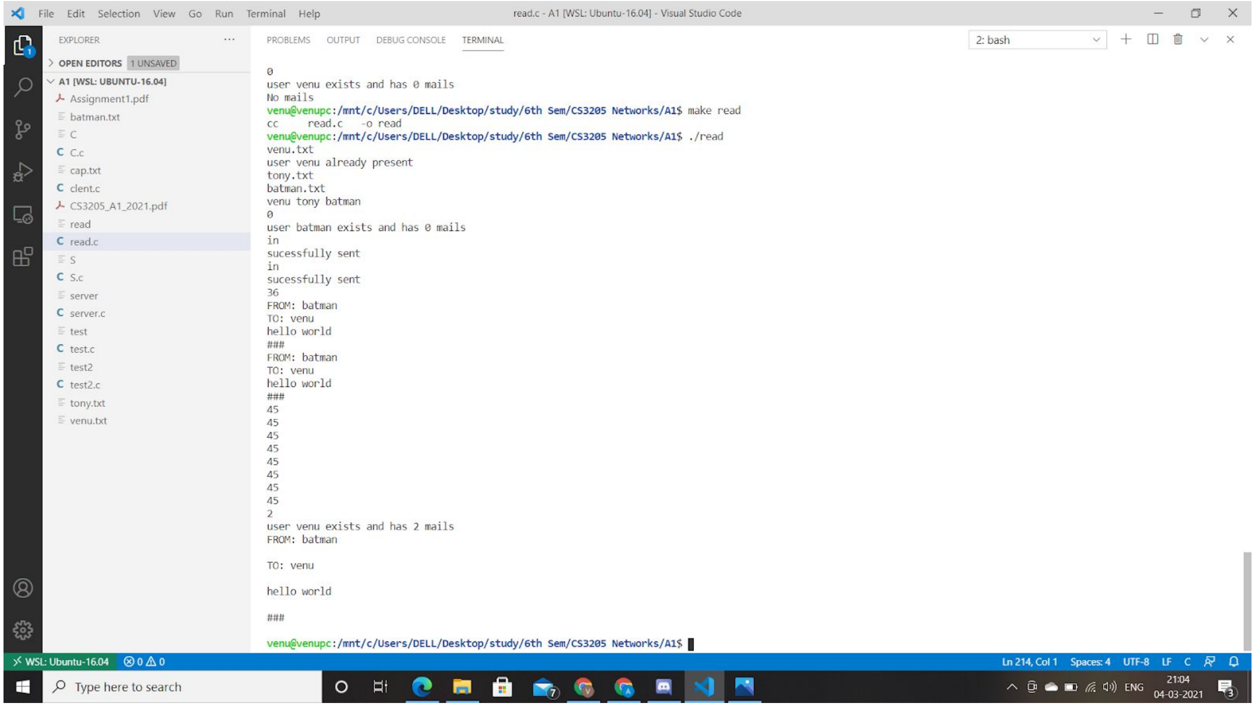


```
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ make read
cc     read.c   -o read
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ ./read
venu.txt
user venu already present
tony.txt
batman.txt
venu tony batman
user batman exists and has 0 mails
in
sucessfully sent
user venu exists and has 0 mails
No mails
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ make read
cc     read.c   -o read
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ ./read
venu.txt
user venu already present
tony.txt
batman.txt
venu tony batman
0
user batman exists and has 0 mails
in
sucessfully sent
0
user venu exists and has 0 mails
No mails
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ make read
cc     read.c   -o read
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ ./read
venu.txt
user venu already present
tony.txt
batman.txt
venu tony batman
0
user batman exists and has 0 mails
in
sucessfully sent
0
user venu exists and has 0 mails
No mails
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ make read
cc     read.c   -o read
```

Below is a 2 screenshots of output for checking of reading mail and deleting mail



```
36
0
user venu exists and has 0 mails
No mails
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ make test
cc     test.c   -o test
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ ./test
GfgTest.c file failed to open.venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ make test
cc     test.c   -o test
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ ./test
The file is now opened.
#include <stdio.h>

int main(){
    for(int i=0;i<10;i++){
        printf("%d ",i);
    }
    printf("\n");
}Data successfully read from file GfgTest.c
The file is now closed.venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ make test
cc     test.c   -o test
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ ./test
The file is now opened.
FROM: batman
TO: venu
hello world
###
FROM: batman
TO: venu
hello world
###
Data successfully read from file GfgTest.c
The file is now closed.venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ make read
cc     read.c   -o read
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ ./read
venu.txt
user venu already present
tony.txt
batman.txt
venu tony batman
0
user batman exists and has 0 mails
in
sucessfully sent
in
```

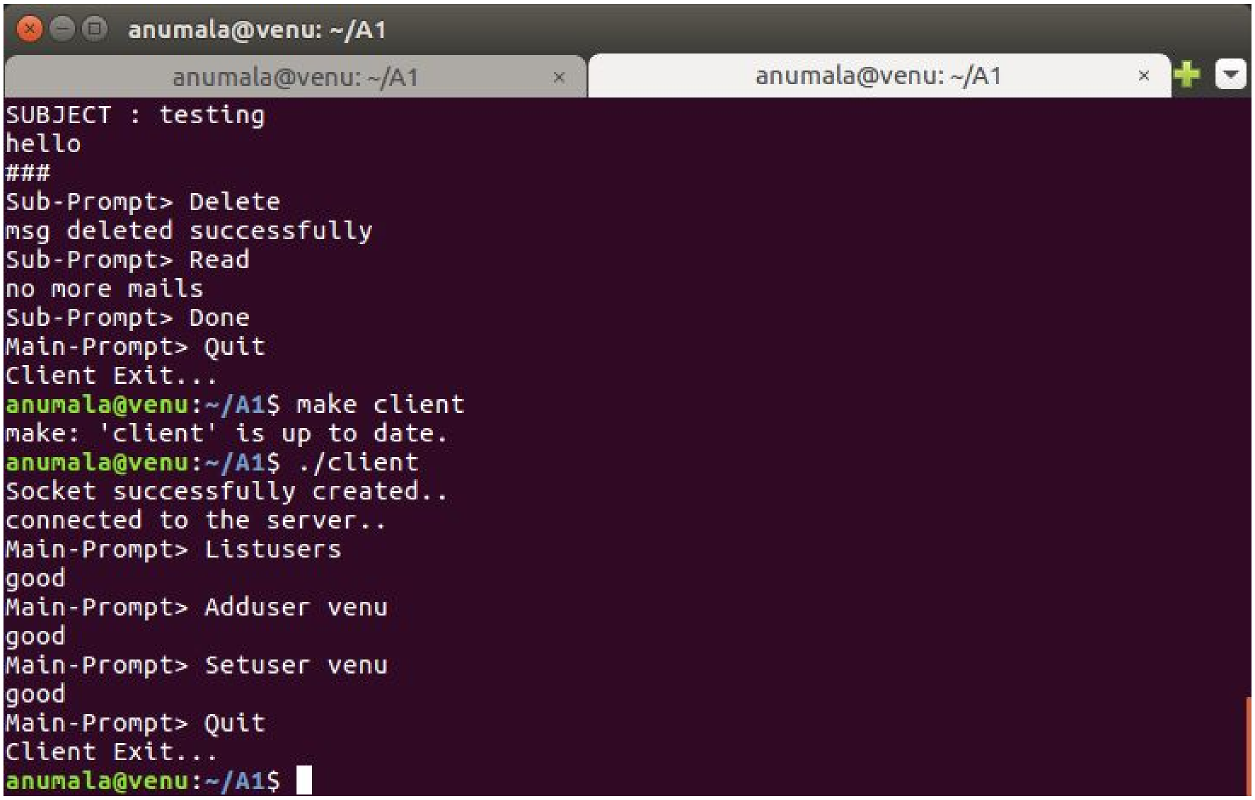


```
0
user venu exists and has 0 mails
No mails
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ make read
cc     read.c   -o read
venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ ./read
venu.txt
user venu already present
tony.txt
batman.txt
venu tony batman
0
user batman exists and has 0 mails
in
sucessfully sent
in
sucessfully sent
36
FROM: batman
TO: venu
hello world
###
FROM: batman
TO: venu
hello world
###
45
45
45
45
45
45
45
45
2
user venu exists and has 2 mails
FROM: batman

TO: venu

hello world

###

venu@venupc:/mnt/c/Users/DELL/Desktop/study/6th Sem/CS3205 Networks/A1$ 
```

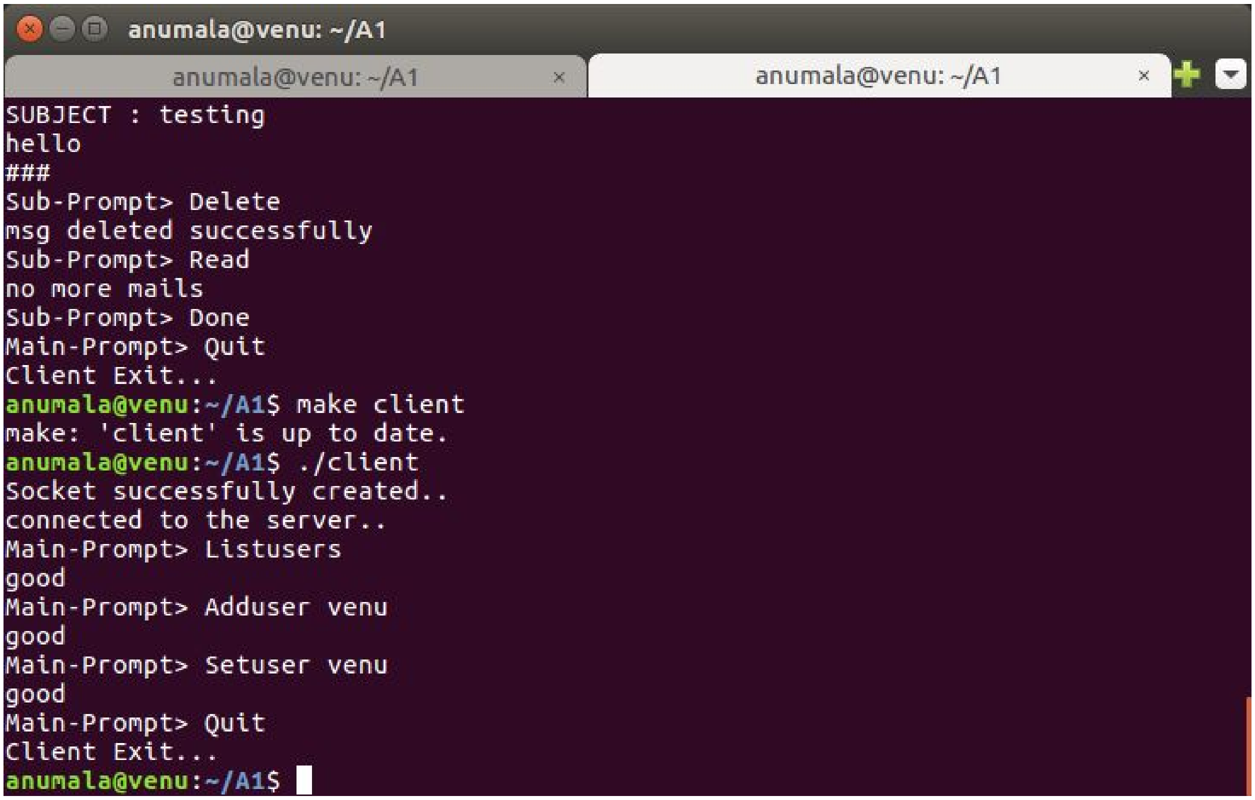
2) USER INPUT INTERFACE

Here i will use server.c from geeks for geeks without any change with my client.c , in which i implemented such that it takes user input and generates commands that are to be passed to server.c , here we check if the generation is correct or not.

Below are 2 screenshots of that checking.
This is client terminal



```
SUBJECT : testing
hello
###
Sub-Prompt> Delete
msg deleted successfully
Sub-Prompt> Read
no more mails
Sub-Prompt> Done
Main-Prompt> Quit
Client Exit...
anumala@venu:~/A1$ make client
make: 'client' is up to date.
anumala@venu:~/A1$ ./client
Socket successfully created..
connected to the server..
Main-Prompt> Listusers
good
Main-Prompt> Adduser venu
good
Main-Prompt> Setuser venu
good
Main-Prompt> Quit
Client Exit...
anumala@venu:~/A1$
```



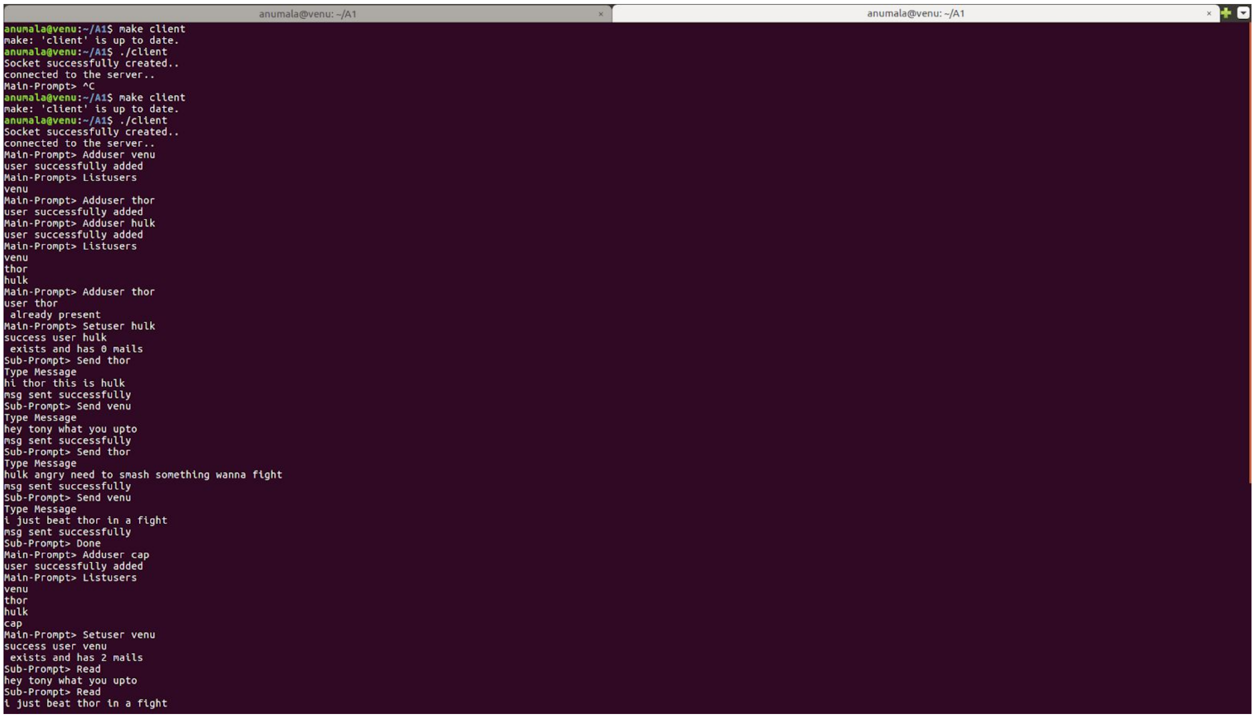
SUBJECT : testing
hello
###
Sub-Prompt> Delete
msg deleted successfully
Sub-Prompt> Read
no more mails
Sub-Prompt> Done
Main-Prompt> Quit
Client Exit...
anumala@venu:~/A1$ make client
make: 'client' is up to date.
anumala@venu:~/A1$ ./client
Socket successfully created..
connected to the server..
Main-Prompt> Listusers
good
Main-Prompt> Adduser venu
good
Main-Prompt> Setuser venu
good
Main-Prompt> Quit
Client Exit...
anumala@venu:~/A1$

This is server terminal

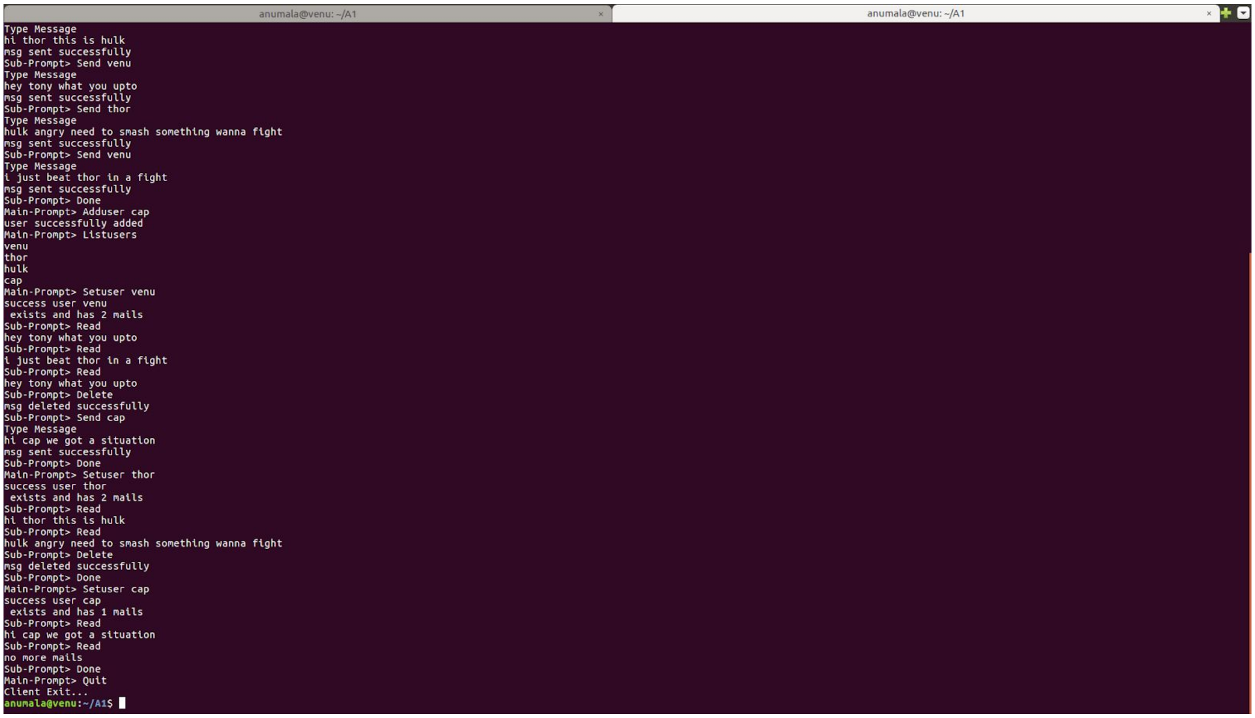
3) Implement socket

Now we will implement socket and run commands , i checked for one command at a time.

Below are screenshots of output for running all commands but before full implementation



```
anumala@venu:~/A1$ make client
make: 'client' is up to date.
anumala@venu:~/A1$ ./client
Socket successfully created..
connected to the server..
Main-Prompt> ^C
anumala@venu:~/A1$ make client
make: 'client' is up to date.
anumala@venu:~/A1$ ./client
Socket successfully created..
connected to the server..
Main-Prompt> Adduser venu
user successfully added
Main-Prompt> Listusers
venu
Main-Prompt> Adduser thor
user successfully added
Main-Prompt> Adduser hulk
user successfully added
Main-Prompt> Listusers
venu
thor
hulk
Main-Prompt> Adduser thor
user thor
 already present
Main-Prompt> Setuser hulk
success user hulk
 exists and has 0 mails
Sub-Prompt> Send thor
Type Message
hi thor this is hulk
msg sent successfully
Sub-Prompt> Send venu
Type Message
hey tony what you upto
msg sent successfully
Sub-Prompt> Send thor
Type Message
hulk angry need to smash something wanna fight
msg sent successfully
Sub-Prompt> Send venu
Type Message
i just beat thor in a fight
msg sent successfully
Sub-Prompt> Done
Main-Prompt> Adduser cap
user successfully added
Main-Prompt> Listusers
venu
thor
hulk
cap
Main-Prompt> Setuser venu
success user venu
 exists and has 2 mails
Sub-Prompt> Read
hey tony what you upto
Sub-Prompt> Read
i just beat thor in a fight
```



```
Type Message
hi thor this is hulk
msg sent successfully
Sub-Prompt> Send venu
Type Message
hey tony what you upto
msg sent successfully
Sub-Prompt> Send thor
Type Message
hulk angry need to smash something wanna fight
msg sent successfully
Sub-Prompt> Send venu
Type Message
i just beat thor in a fight
msg sent successfully
Sub-Prompt> Done
Main-Prompt> Adduser cap
user successfully added
Main-Prompt> Listusers
venu
thor
hulk
cap
Main-Prompt> Setuser venu
success user venu
 exists and has 2 mails
Sub-Prompt> Read
hey tony what you upto
Sub-Prompt> Read
i just beat thor in a fight
Sub-Prompt> Read
hey tony what you upto
Sub-Prompt> Delete
msg deleted successfully
Sub-Prompt> Send cap
Type Message
hi cap we got a situation
msg sent successfully
Sub-Prompt> Done
Main-Prompt> Setuser thor
success user thor
 exists and has 2 mails
Sub-Prompt> Read
hi thor this is hulk
Sub-Prompt> Read
hulk angry need to smash something wanna fight
Sub-Prompt> Delete
msg deleted successfully
Sub-Prompt> Done
Main-Prompt> Setuser cap
success user cap
 exists and has 1 mails
Sub-Prompt> Read
hi cap we got a situation
Sub-Prompt> Read
no more mails
Sub-Prompt> Done
Main-Prompt> Quit
Client Exit...
anumala@venu:~/A1$
```