**Network Programming for Engineers (ECE 5650)**

**Project 1**

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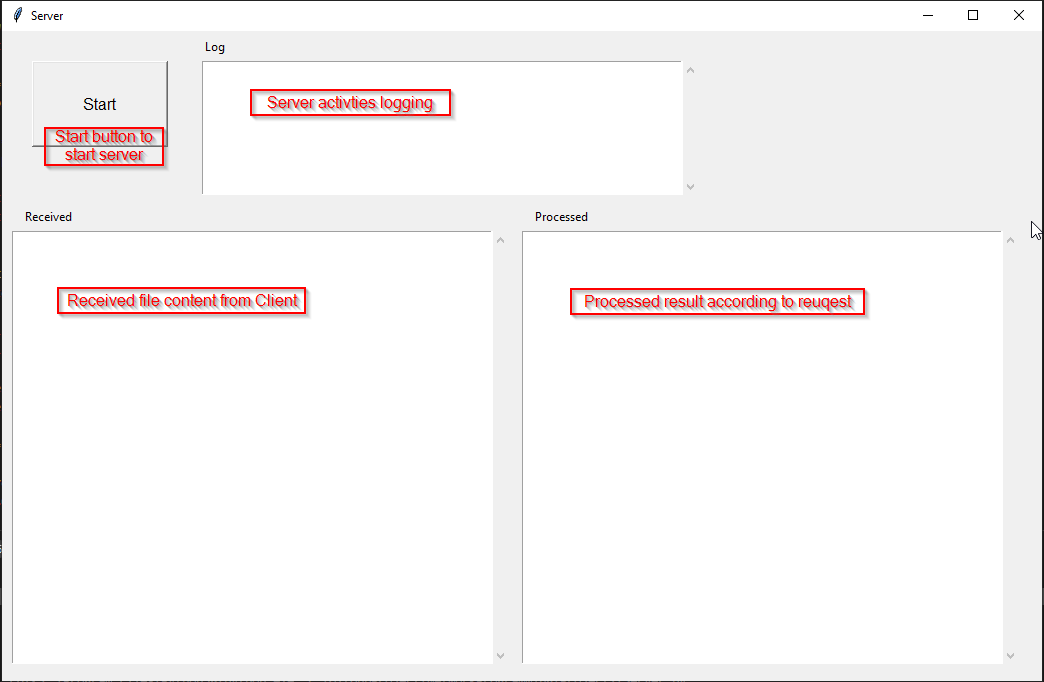
**Source Code(s):**

**Source code for …:**

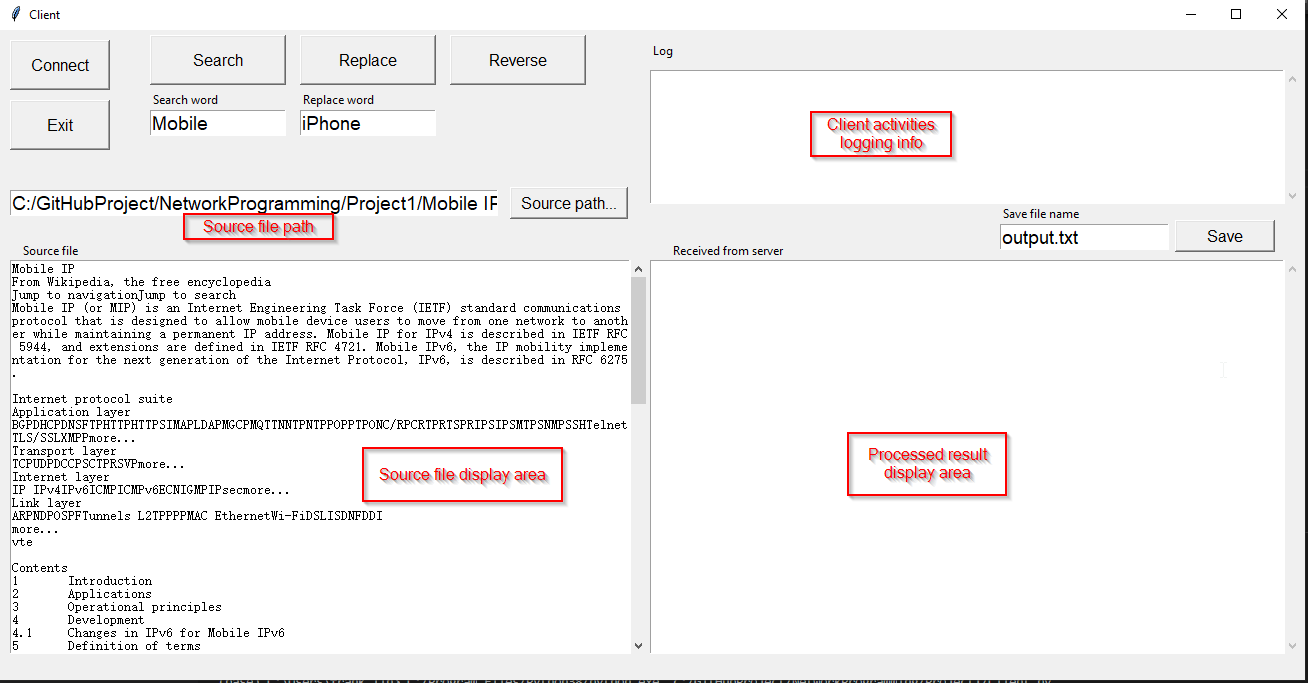
**Source code for …:**

**Overview of the tools:**

1. Server program GUI overview.

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1. Client program GUI overview.

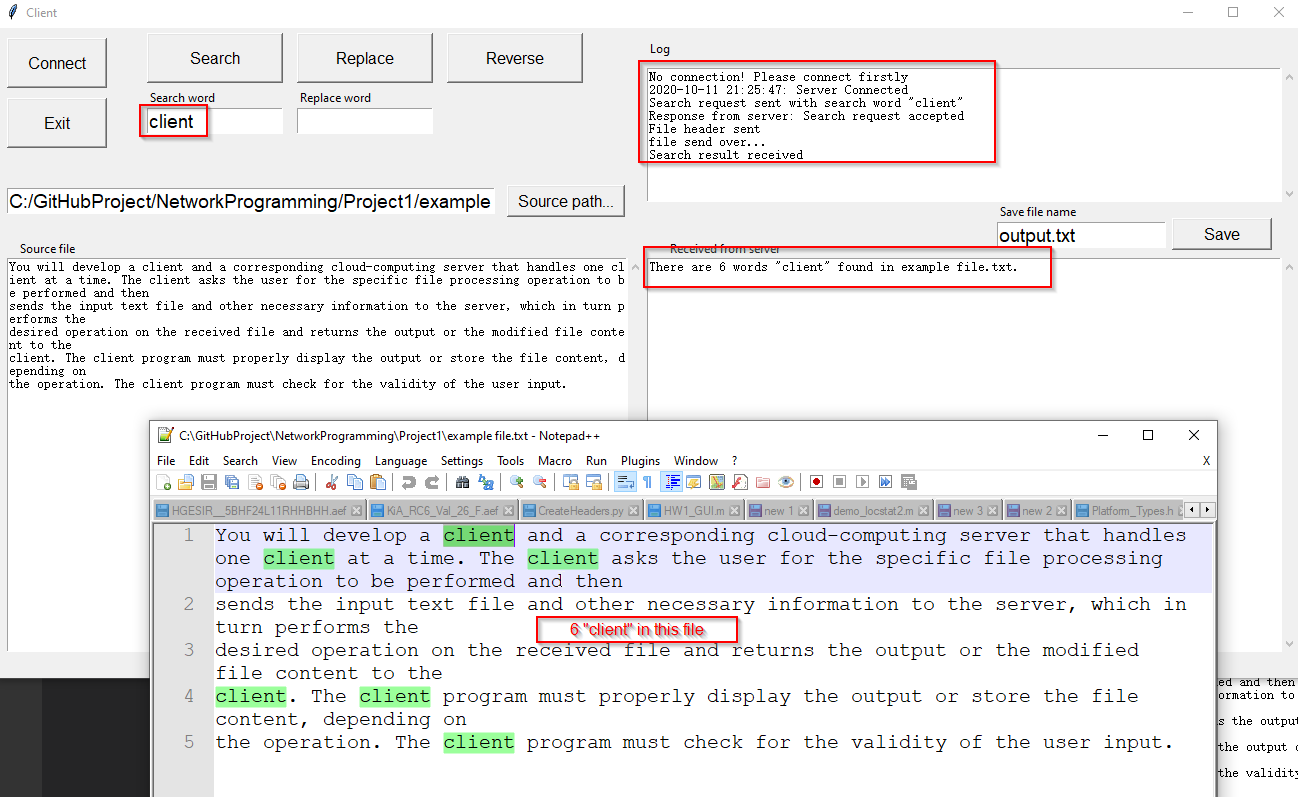
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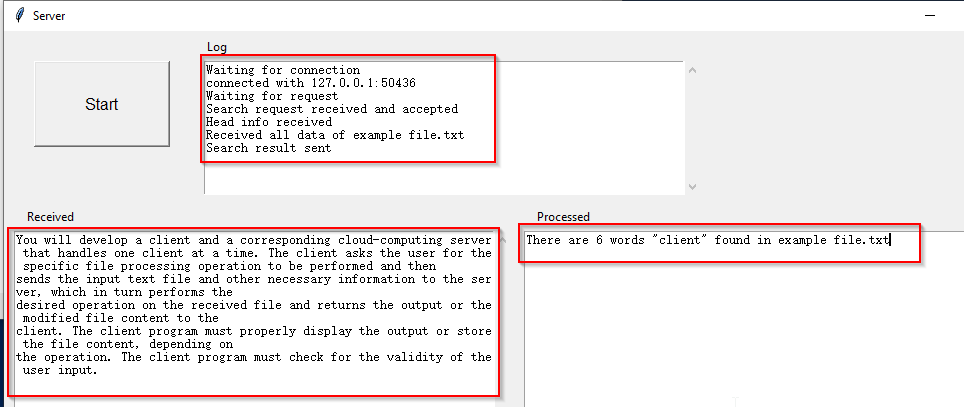
**Testing Procedure, including Description of Inputs**

1. Start Server program, and click on “Start” button.
   1. Server log info should show “Waiting for connection”
2. Start Client program, and click on “Connect” button.
   1. Client log info should show “Server Connected
   2. Server log info should show which client connected and from which port.
   3. Server should wait for a client’s request.
3. In the Client program, do below steps for each function:
   1. **Searching function**:
      1. Click on “Source path…” button to select the file you want to process, the file content shall be displayed in “Source file display area”
      2. Enter the searching word in “Searching word” entry area
      3. Click on button “Search”
      4. Check the result on “Processed result display area” of both Client and Server, they are should be same.
      5. Check on Server program window, the received file content should be same as the Client’s source file.
      6. Check log info of both Client and Server. They should show detail communication steps of search function.
   2. **Replacing function**:
      1. Click on “Source path…” button to select the file you want to process.(skip this step if you want to keep processing previous file loaded)
      2. Enter the searching word in “Searching word” entry area
      3. Enter the replacing word in “Replacing word” entry area
      4. Click on button “Replace”
      5. Check on Server program window, the Received file content should be same as the Client’s source file
      6. Check the Received from server area which should be same as Server Processed area.
      7. Enter the file name in “Save file name” area, Click on “Save” button to save the file.
      8. Check if the file is saved under the location same as Client program.
      9. Check log info of both Client and Server. They should show detail communication steps of Replace function.
   3. **Reverse function**:
      1. Click on “Source path…” button to select the file you want to process.(Skip this step if you want to keep processing previous file loaded)
      2. Click on button “Reverse”
      3. In Client window, Check the result on “Received from server” area which should be same as server’s Processed area content.
      4. Check on Server program window, the Received file content should be same as the Client’s source file.
      5. Enter the file name in “Save file name” area, Click on “Save” button to save the file.
      6. Check if the file is saved under the location same as Client program.
      7. Check log info of both Client and Server. They should show detail communication steps of Replace function.
   4. **Display function**:
      1. Display function is already shown in above steps
      2. After select the source file via “Source path…”, the source file content shall be displayed in below display area automatically.
      3. The received the result shall be displayed in “Processed result display area” automatically.
   5. **Exit function**:
      1. After any step above, click on “Exit” button
      2. Client should send “EXIT” request to Server if there is connection with server; Server should received this request and close current connection, then wait for another connection.
      3. Client program should be closed.

**Screenshots and Their Explanations:**

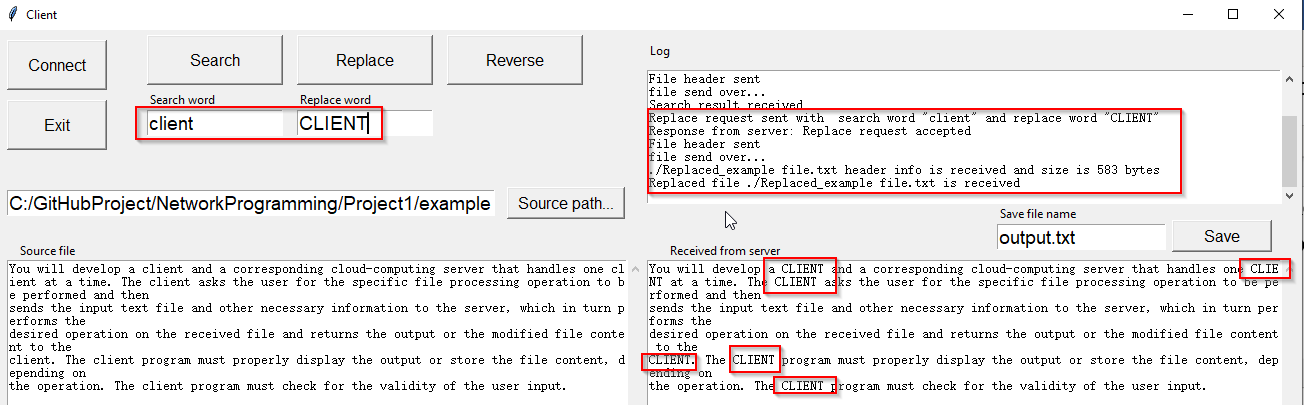
1. **Search function:**

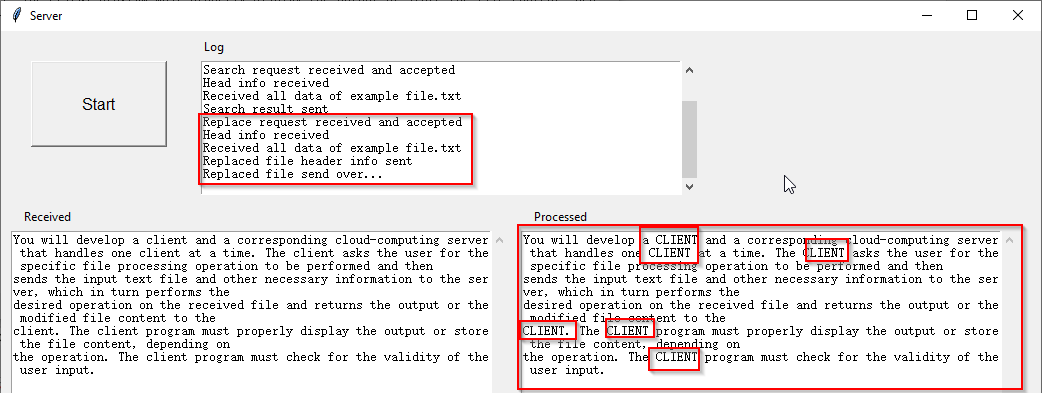
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* + From above figure, the word “client” is sent to server and server accepted the request. And server sent “There are 6 words “client” found in example file.txt.
  + The info in Server program matches with Client’s
  + Log info is also showing detail steps of the communication.

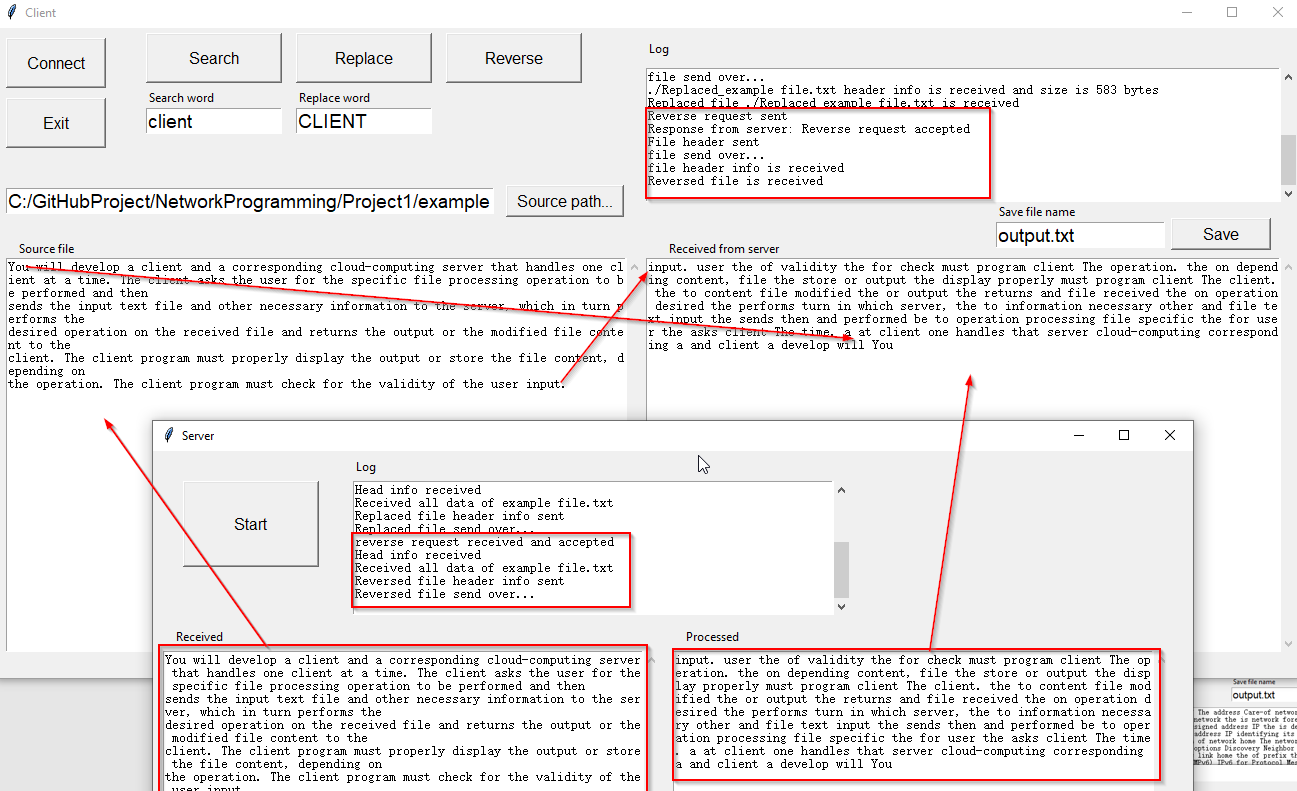
1. **Replace function**

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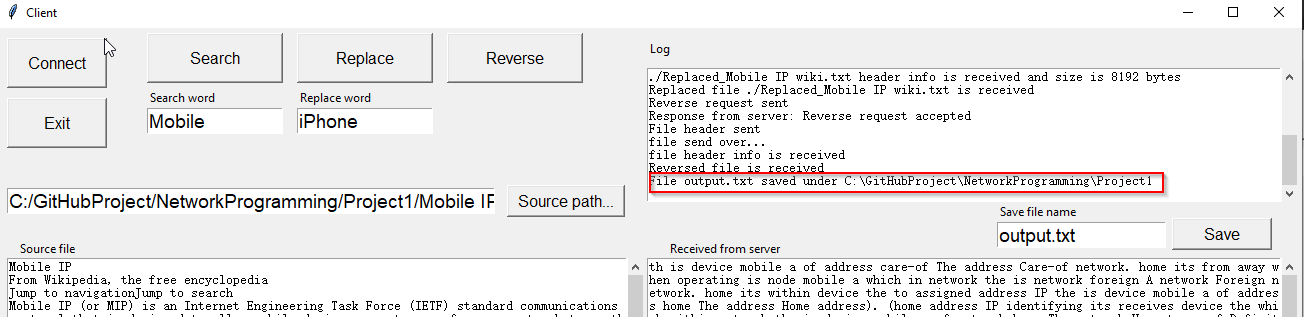
* + From the above figure, the word “client’ is replaced by “CLIENT”. The replaced file is received from server and showed in client program.
  + The info in Server program matches with Client’s
  + Log info is also showing detail steps of the communication.

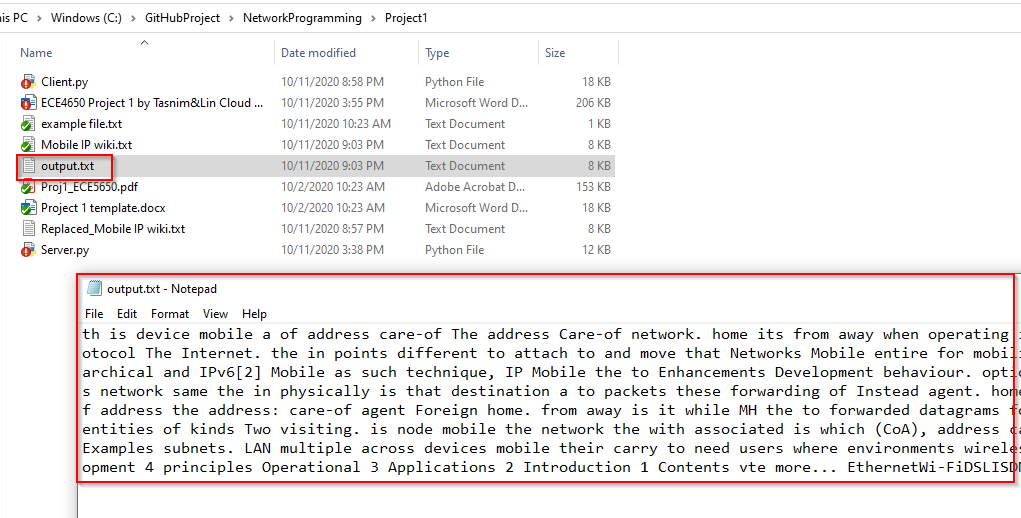
1. **Reverse function**

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* + Server received the source file sent from client. From the content showing above , it is same as the source file.
  + Client received the reversed file sent from Server. From the content showing above, it is same as the processed content in server.
  + Log info is also showing detail steps of the communication.

1. **Save file**

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**Completion Status and Self-Critique:**

For program **Client.py**:

* Does your program meet all requirements? If not, explain the problem.

Yes

* Does the program run correctly all the time? If not, explain the problem.

Yes

* Did you adequately test the program? If not, specify.

Yes

* Is the program well documented?

Yes

For program **Server.py**:

* Does your program meet all requirements? If not, explain the problem.

Yes

* Does the program run correctly all the time? If not, explain the problem.

Yes

* Did you adequately test the program? If not, specify.

Yes

* Is the program well documented?

Yes