**PRACTICAL EXERCISE 04 – IT4062**

**Use TCP Socket to build the following applications:**

**Exercise 1.** String processing:

* **Server:**
* Start the server with the port number provided by command line parameters:

$./server Port\_Number (Example: $./server 5500)

* Receive a string from client. Split that string to two different strings. One string only contains alphabet character while the other one only contains digit characters.
* Send two result strings to the client
* If the received strings contain one of non-alphabet and non-digit characters, send the error notification to the client
* **Client**:
* Start with the serve IP address and port provided by command line parameters:

$./client IP\_Addr Port\_Number (Example: $./client 10.0.0.1 5500)

* User types string from keyboard and the program sends it to server
* Receive results from server
* Repeat until the user types a blank string.
* The application needs to solve the communication problem of TCP. (Streaming method)

***Note: Use Makefile to create the binary files with the names of files: server and client***

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| --- | --- |
| **INPUT** | **OUTPUT** |
| 1ab23c | 123  abc |
| 123abc# | Error |

**Exercise 2.** Write an application to transfer a file from client to server. File can be in any format and its size could be up to 100MB.

* **Server:**
* Start the server with the port number specified by command line parameters:

$./server Port\_Number (Example: $./server 5500)

* Use a directory to save the files from all users
* If the name of the received files is conflicted with an existing file, notify the error.
* **Client**:
* Start with the server IP address and port got from command line parameters:

$./client IP\_Addr Port\_Number (Example: $./client 10.0.0.1 5500)

* Get the path of the file from keyboard
* Send that file to the server
* Show the results of the file transmission (success or fail)
* Repeat again until the the input path is blank

***Note: Use Makefile to create the binary files with the names of files: server and client***

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| --- | --- |
| **INPUT** | **OUTPUT** |
| D:/test/testfile.jpg | Transfer complete |
| D:/test/testfile.rar | Error: File not found |
| D:/test/testfile.jpg | Error: File is existed on server |
| D:/test/testfile.avi | Error: File transferring is interrupted |