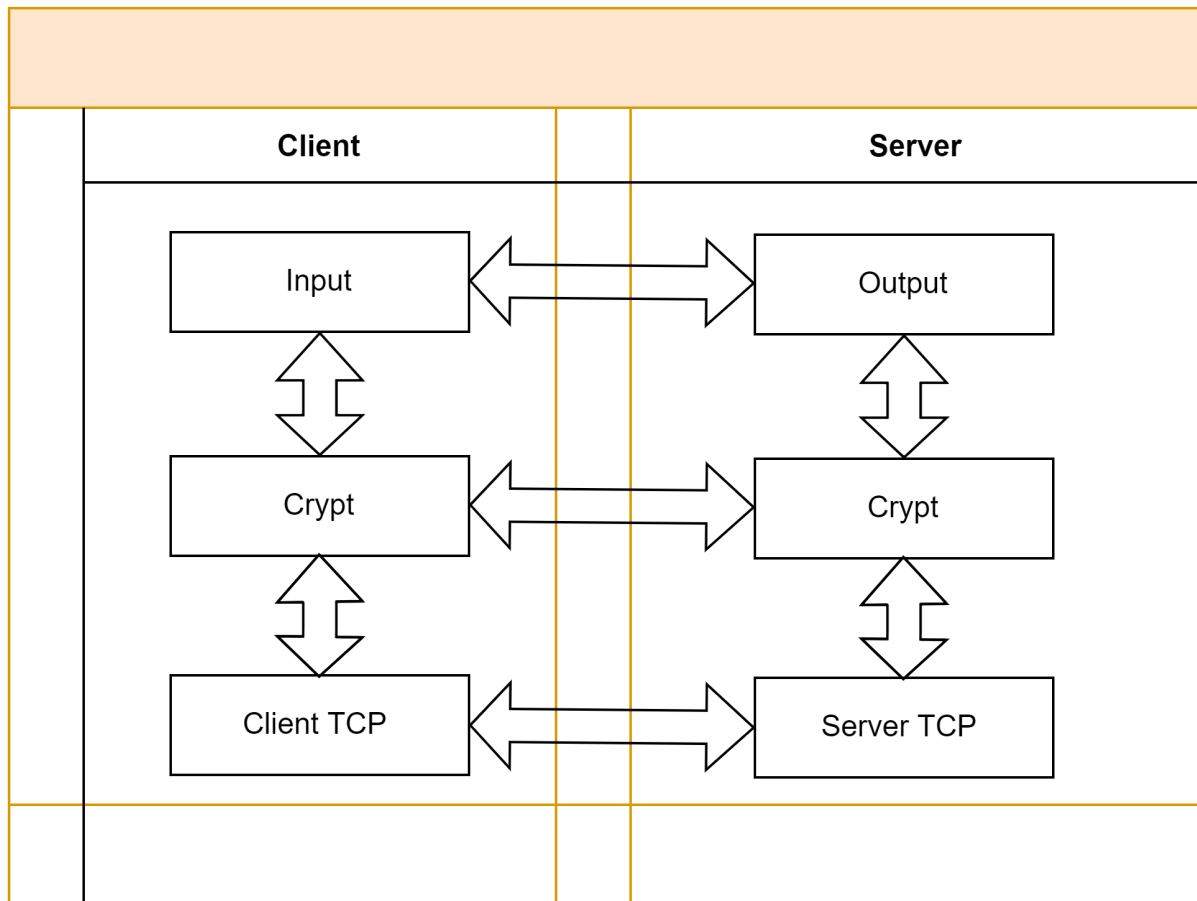


Initially, sockets are instantiated in both client and server python files. Corresponding host addresses and bindings are done.



Client Layer 1:

The input is taken from the client terminal and then passed to the Crypt Layer. Input consists of the five commands along with the mode of encryption.

The message and mode used are sent to Layer 2.

Client Layer 2:

In this layer, we get the command passed from layer one into a encrypt function. Encrypt function consists of two parameters- string and mode.

The encrypted string is sent to Client Layer 3

Client Layer 3:

In this layer, we send the encrypted message to the server using the TCP networking layer.

Server Layer 3:

This is where the input is taken from the client socket through the server socket, and the input received needs to be sent to Layer 2, where the message needs to be decrypted.

Sever Layer 2:

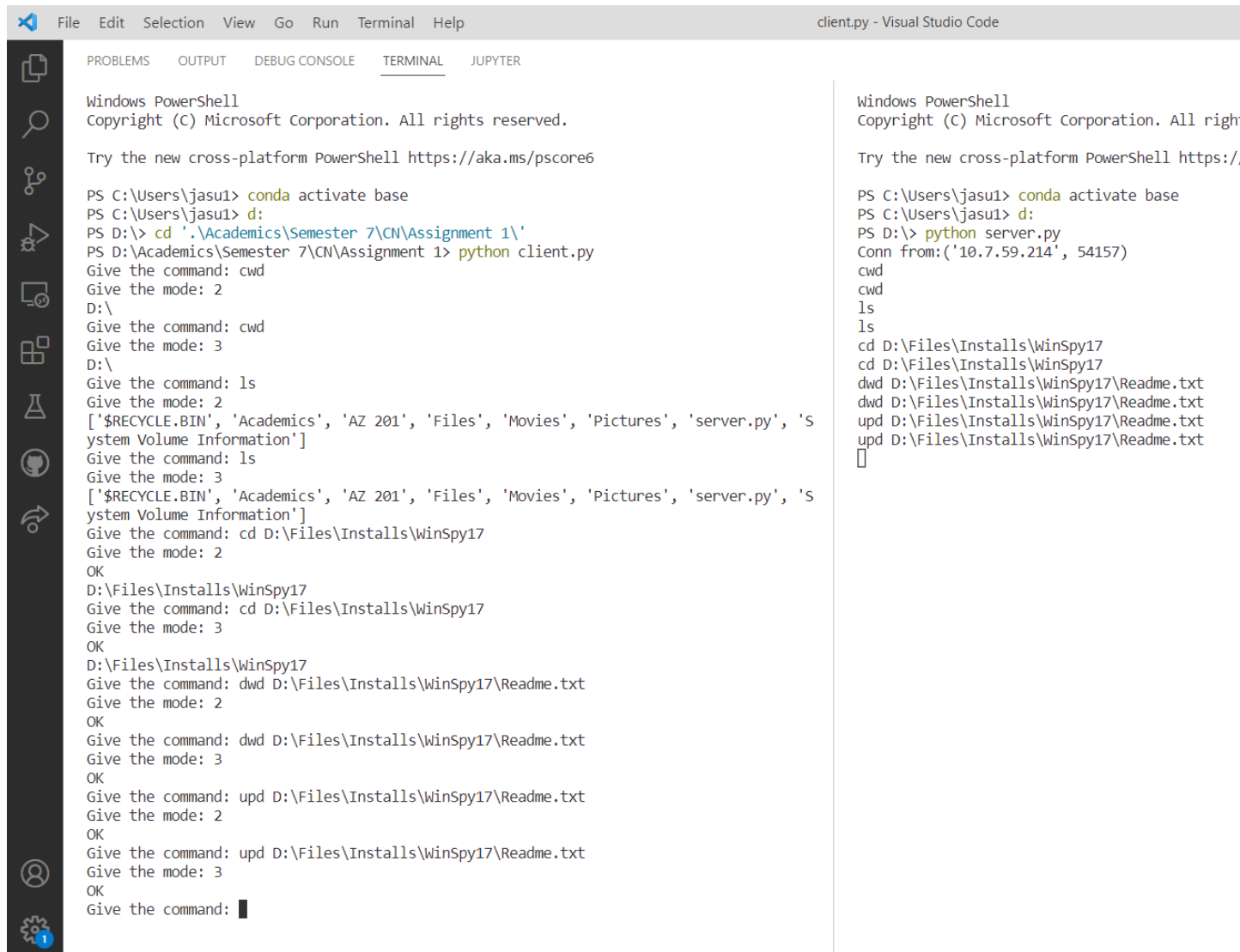
The message is taken from Server Layer 3, decrypted and sent to Layer 1

Server Layer 1:

Finally, the decrypted message is received to the application layer of the server-side and appropriate work is done using the message.

After the work is done at the server application layer, we need to send an appropriate request message to the client, and this is done in a similar way that the client sends the message to the server.

Here we can find the execution of the commands for two modes= 2,3.



The screenshot shows the Visual Studio Code interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar indicates the active file is 'client.py'. The left sidebar contains icons for Explorer, Search, Source Control, Run and Debug, and Extensions. The main editor area is split into two panes. The left pane shows the 'TERMINAL' tab with a Windows PowerShell session. The right pane shows the 'client.py' file content. The terminal output shows a series of commands and their execution results, including directory changes, file listings, and file uploads. The file explorer on the right shows the contents of the 'D:\Files\Installs\WinSpy17' directory.

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\jasu1> conda activate base
PS C:\Users\jasu1> d:
PS D:\> cd '.\Academics\Semester 7\CN\Assignment 1\'
PS D:\Academics\Semester 7\CN\Assignment 1> python client.py
Give the command: cwd
Give the mode: 2
D:\
Give the command: cwd
Give the mode: 3
D:\
Give the command: ls
Give the mode: 2
['$RECYCLE.BIN', 'Academics', 'AZ 201', 'Files', 'Movies', 'Pictures', 'server.py', 'System Volume Information']
Give the command: ls
Give the mode: 3
['$RECYCLE.BIN', 'Academics', 'AZ 201', 'Files', 'Movies', 'Pictures', 'server.py', 'System Volume Information']
Give the command: cd D:\Files\Installs\WinSpy17
Give the mode: 2
OK
D:\Files\Installs\WinSpy17
Give the command: cd D:\Files\Installs\WinSpy17
Give the mode: 3
OK
D:\Files\Installs\WinSpy17
Give the command: dwd D:\Files\Installs\WinSpy17\Readme.txt
Give the mode: 2
OK
Give the command: dwd D:\Files\Installs\WinSpy17\Readme.txt
Give the mode: 3
OK
Give the command: upd D:\Files\Installs\WinSpy17\Readme.txt
Give the mode: 2
OK
Give the command: upd D:\Files\Installs\WinSpy17\Readme.txt
Give the mode: 3
OK
Give the command: 
```

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\jasu1> conda activate base
PS C:\Users\jasu1> d:
PS D:\> python server.py
Conn from:('10.7.59.214', 54157)
cwd
cwd
ls
ls
cd D:\Files\Installs\WinSpy17
cd D:\Files\Installs\WinSpy17
dwd D:\Files\Installs\WinSpy17\Readme.txt
dwd D:\Files\Installs\WinSpy17\Readme.txt
upd D:\Files\Installs\WinSpy17\Readme.txt
upd D:\Files\Installs\WinSpy17\Readme.txt

```

Please zoom in to find the execution of 5 commands.