Screenshots for assignment02 (Programming question)

2.1 Checksum

1) Output of method calculate_checksum(message)

```
C:\Users\Pavithre B Shetty\PycharmProjects\scriptForReadingFiles>main.py
check_sum = calculate_checksum (message)

var 1 :0b1101001
var 2 :0b100000
Sum   :0b10001001
var 1 :0b11110101
var 2 :0b1101100
Sum   :0b11110101
var 1 :0b1100101
var 2 :0b1101111
Sum   :0b1100101
Checksum 0b10011010
```

2) Updating the table

```
Message                                                             Checksum
['0b01101001', '0b00100000', '0b01101100', '0b01101111'] :0b10011010
['0b01110110', '0b01100101', '0b00100000', '0b01110111'] :0b10001100
['0b01100101', '0b01100010', '0b00100000', '0b01110011'] :0b10100100
```

3) Output of method validate checksum

For Successful transmission:

```
check_sum = calculate_checksum (message)

var 1 :0b1101001
var 2 :0b100000
Sum   :0b10001001
var 1 :0b11110101
var 2 :0b1101100
Sum   :0b11110101
var 1 :0b1100101
var 2 :0b1101111
Sum   :0b1100101
Checksum 0b10011010


validate_data(message, checksum)
Successful transmission
```

For corrupted Data:

Note: Changed the bit of original message and sending it as test_message to demonstrate this use case of corrupted data

```
check_sum = calculate_checksum (message)

var 1 :0b1101001
var 2 :0b100000
Sum   :0b10001001
var 1 :0b11110101
var 2 :0b1101100
Sum   :0b11110101
var 1 :0b1100101
var 2 :0b1101111
Sum   :0b1100101
Checksum 0b10011010


validate_data(message, checksum)
Corrupted Data

C:\Users\Pavithre B Shetty\PycharmProjects\scriptForReadingFiles>
```

2.2 TCP Client Server

1) Sender.py

```
C:\Users\Pavithre B Shetty\PycharmProjects\scriptForReadingFiles>sender.py
Connected to tmps: (127.0.0.1, 8080)
var 1 :0b11001111
var 2 :0b1011000
Sum    :0b101000
var 1 :0b11101110
var 2 :0b11000110
Sum    :0b11101110
var 1 :0b10010100
var 2 :0b10100101
Sum    :0b10010100
Checksum 0b1101011


Response from the receiver b ' Receiver Message
Data is correctly received and checksum is 0b1101011
```

2) receiver.py

```
C:\Users\Pavithre B Shetty\PycharmProjects\receiver>receiver.py
Connection from: ('127.0.0.1', 60056)
Got the following message [207, 88, 198, 165] and 107 as checksum from the sender
var 1 :0b11001111
var 2 :0b1011000
Sum    :0b101000
var 1 :0b11101110
var 2 :0b11000110
Sum    :0b11101110
var 1 :0b10010100
var 2 :0b10100101
Sum    :0b10010100
var 1 :0b11111111
var 2 :0b1101011
Sum    :0b11111111
Got the following sum 0b11111111 after the validation
Successful transmission
```