

**CS 372**

**Programming Project -  
Reliable Data Transmission**

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To run this application, root access might be required. To do so, please run `sudo su root`

After that, you can do the following command to run the application:

```
$ python3 rdt_main.py
```

To edit the text you want to send, please edit on the `rdt_main.py` under `dataToSend`

In the end, this application would give you results of the results if the data received successfully.

This screen shot only giving the longer version of the text, but the shorter version of the text does run successfully as well.

This Reliable Data Transmission is done on Python.

```
Konsole File Edit View Bookmarks Plugins Settings Help
[Application Launcher] -pro-15 project3]# python3 rdt_main.py

Time (iterations) = 1
Client-----
Sending the Segment: seq: 4, ack: -1, data:

Sending the Segment: seq: 8, ack: -1, data: ...W
Sending the Segment: seq: 12, ack: -1, data: e ch
Sending ack: seq: -1, ack: 0, data:
Server-----
Sending ack: seq: -1, ack: 0, data:
Main-----
DataReceivedFromClient:

... We ch
Press enter to continue ...

Time (iterations) = 2
Client-----
Sending the Segment: seq: 16, ack: -1, data: oose
Sending the Segment: seq: 20, ack: -1, data: to
Sending the Segment: seq: 24, ack: -1, data: go t
Sending ack: seq: -1, ack: 0, data:
Server-----
Sending ack: seq: -1, ack: 0, data:
Main-----
DataReceivedFromClient:

... We choose to go t
Press enter to continue ...

Time (iterations) = 3
Client-----
Sending the Segment: seq: 28, ack: -1, data: o th
Sending the Segment: seq: 32, ack: -1, data: e mo
Sending the Segment: seq: 36, ack: -1, data: on.
Sending ack: seq: -1, ack: 0, data:
Server-----
Sending ack: seq: -1, ack: 0, data:
Main-----
DataReceivedFromClient:

... We choose to go to the moon.
Press enter to continue ...

Time (iterations) = 4
Client-----
Sending the Segment: seq: 40, ack: -1, data: We c
Sending the Segment: seq: 44, ack: -1, data: hoos
Sending the Segment: seq: 48, ack: -1, data: e to
Sending ack: seq: -1, ack: 0, data:
Server-----
Sending ack: seq: -1, ack: 0, data:
Main-----
DataReceivedFromClient:
```

```
Konsole File Edit View Bookmarks Plugins Settings Help
0.0 B
0.0 B
Application Launcher
Segment: seq: 1232, ack: -1, data: mber
Application Launcher
Segment: seq: 1236, ack: -1, data: 12,
Sending ack: seq: -1, ack: 0, data:
Server-----
Sending ack: seq: -1, ack: 0, data:
Main-----
DataReceivedFromClient:

...We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organ
ize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the oth
ers, too.

...we shall send to the moon, 240,000 miles away from the control station in Houston, a giant rocket more than 300 feet tall, the length of this football field, made of new metal alloys, some
of which have not yet been invented, capable of standing heat and stresses several times more than have ever been experienced, fitted together with a precision better than the finest watch,
carrying all the equipment needed for propulsion, guidance, control, communications, food and survival, on an untried mission, to an unknown celestial body, and then return it safely to earth
, re-entering the atmosphere at speeds of over 25,000 miles per hour, causing heat about half that of the temperature of the sun--almost as hot as it is here today--and do all this, and do it
right, and do it first before this decade is out.

JFK - September 12,
Press enter to continue ...

Time (iterations) = 104
Client-----
Sending the Segment: seq: 1240, ack: -1, data: 196
Sending the Segment: seq: 1244, ack: -1, data: 2

Sending ack: seq: -1, ack: 0, data:
Server-----
Sending ack: seq: -1, ack: 0, data:
Main-----
DataReceivedFromClient:

...We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organ
ize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the oth
ers, too.

...we shall send to the moon, 240,000 miles away from the control station in Houston, a giant rocket more than 300 feet tall, the length of this football field, made of new metal alloys, some
of which have not yet been invented, capable of standing heat and stresses several times more than have ever been experienced, fitted together with a precision better than the finest watch,
carrying all the equipment needed for propulsion, guidance, control, communications, food and survival, on an untried mission, to an unknown celestial body, and then return it safely to earth
, re-entering the atmosphere at speeds of over 25,000 miles per hour, causing heat about half that of the temperature of the sun--almost as hot as it is here today--and do all this, and do it
right, and do it first before this decade is out.

JFK - September 12, 1962

$$$$$$$ ALL DATA RECEIVED $$$$$$$
countTotalDataPackets: 311
countSentPackets: 830
countChecksumErrorPackets: 0
countOutOfOrderPackets: 0
countDelayedPackets: 0
countDroppedDataPackets: 0
countAckPackets: 415
countDroppedAckPackets: 0
# segment timeouts: 0
TOTAL ITERATIONS: 104
[root@trashbook-pro-15 project3]#
```