Network Design : Principles, Protocols and Applications

EECE.5830 – 201

Instructor: *Prof. Dr. Vinod Vokkarane*

Programming Project Phase 2: UDP Implementing RDT 1.0 over a reliable UDP Channel

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Table of contents

I. UDP Client

Class name: UDPClient

Purpose: The purpose of this class is to send data (.bmp file) from the client to server which is read through a input file stream, send the file through a UDP datagram socket, to receive the response (.bmp file) from the server and to write it to an output file stream.

Data types:

ByteBuffer: Stores a copy of bytes of the file from the file channel.

Byte[]: It is an array of bytes of a file used to pass the data through the datagram channel.

Methods used :

make_pkt : Creates a packet containing the data

udt_send : Packet is sent using this operation (Unreliable)

rdt_send : Packet is sent using this operation (Reliable)

II. UDP Server

Class name: UDPServer

Purpose: The purpose of this file is to receive data (.bmp file) from the client through an UDP data gram socket which is written to an output file stream, send the response (.bmp file) to the client which is read from output file stream.

Data types:

ByteBuffer: Stores a copy of bytes of the file from the file channel.

Byte[]: It is an array of bytes of a file used to pass the data through the datagram channel.

Methods used :

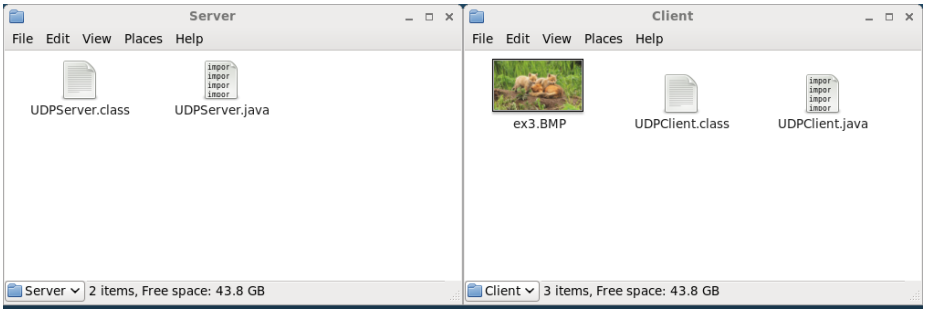
extract() : Removes the data from the packet.

rdt_rcv() : Receives a packet from the underlying channel.

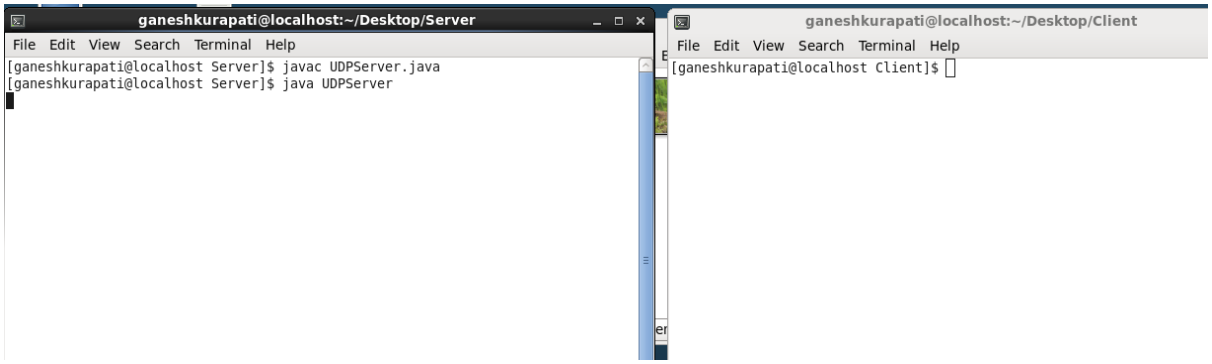
deliver_data() : Passes the data to the upper layer.

III. Execution of the program

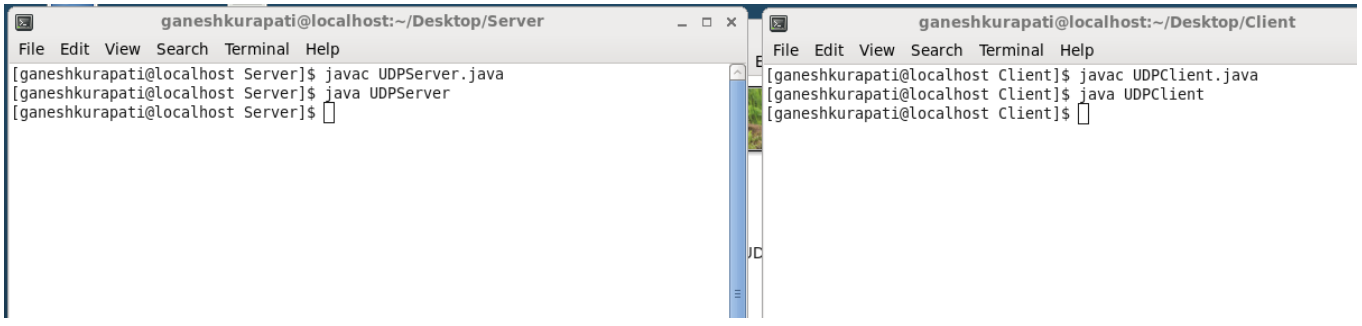
1. Initial contents of the Client and Server folders



2. Setting up the server by executing the UDPServer program



3. Setting up the client by executing the UDPClient program



4. Final contents of the folder after sending and receiving the .bmp file