Lab 2_Bhati Nancy_SCEX

EXERCISE 2C: RFC 865 UDP SERVER

Rfc865UdpServer.java × Rfc865UdpClient.java

Lab_2.java/src/Rfc865UdpServer.java

```java
import java.net.DatagramPacket;
import java.net.DatagramSocket;
import java.net.InetAddress;
import java.net.SocketException;

public class Rfc865UdpServer {

    static int QOTD_PORT = 17;
    static String QUOTE = "Quote of the Day!!!";

    public static void main(String[] args) {

        /* Open UDP socket */
        DatagramSocket socket = null;
        try {
            socket = new DatagramSocket(QOTD_PORT);
            System.out.println("UDP Server listening on port " + QOTD_PORT);
        } catch (SocketException e) {
            e.printStackTrace();
            System.exit(-1);
        }
        try {
            while (true) {
                /* Listen for UDP request from client */
                byte[] buf = new byte[512];
                DatagramPacket request = new DatagramPacket(buf, buf.length);
                System.out.println("Waiting for request...");
                socket.receive(request);

                /* Process the request */
                String requestContent = new String(buf);
                System.out.println("Received request: " + requestContent);

                InetAddress clientAddress = request.getAddress();
                int clientPort = request.getPort();
                System.out.println("From client: " + clientAddress.getCanonicalHostName());

                /* Send UDP reply to client */
                String replyContent = QUOTE;
                byte[] replyBuf = replyContent.getBytes("UTF-8");
                System.out.println("Reply content: " + replyContent);

                DatagramPacket reply = new DatagramPacket(replyBuf, replyBuf.length, clientAddress, clientPort);
                System.out.println("Sending reply...");
                socket.send(reply);
                System.out.println("Reply sent");
                System.out.println("Reply sent");
            }
        } catch (IOException e) {
            e.printStackTrace();
        } finally {
            socket.close();
        }
    }
}
```

EXERCISE 2D: RFC 865 UDP CLIENT

Rfc865UdpServer.java × Rfc865UdpClient.java ×

```java
import java.io.UnsupportedEncodingException;
import java.net.DatagramPacket;
import java.net.DatagramSocket;
import java.net.InetAddress;
import java.net.SocketException;
public class Rfc865UdpClient {
    private static final int QOTD_PORT = 17;
    private static final String SERVER_NAME = "hwlab1.scse.ntu.edu.sg";

    public static void main(String[] args) {
        try (DatagramSocket socket = new DatagramSocket()) {
            InetAddress serverAddress = InetAddress.getByName(SERVER_NAME);
            socket.connect(serverAddress, QOTD_PORT);
            System.out.println("UDP Client connected on port " + QOTD_PORT + " to server: " + serverAddress.getCanor

            String content = "BHATI NANCY,SCEX " + InetAddress.getLocalHost().getHostAddress();
            byte[] buf = content.getBytes("UTF-8");
            System.out.println("Content to send: " + content);

            DatagramPacket request = new DatagramPacket(buf, buf.length);
            System.out.println("Sending request...");
            socket.send(request);
            System.out.println("Request sent to server");

            byte[] replyBuf = new byte[512];
            DatagramPacket reply = new DatagramPacket(replyBuf, replyBuf.length);
            System.out.println("Waiting for reply...");
            socket.receive(reply);

            String replyContent = new String(replyBuf, "UTF-8");
            System.out.println("Received reply: " + replyContent);
        } catch (SocketException e) {
            System.err.println("Error creating socket: " + e.getMessage());
        } catch (UnsupportedEncodingException e) {

            System.err.println("Error encoding request content: " + e.getMessage());
        } catch (Exception e) {
            System.err.println("Error communicating with server: " + e.getMessage());}}}
```