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ASSIGNMENT 8

Socket Programming for UDP Client, UDP Server.

Client

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

public class UDPClient {
    public static void main(String[] args) {
        try {
            DatagramSocket socket = new DatagramSocket();

            String message = "Hello, UDP Server!";
            byte[] sendData = message.getBytes();
            InetAddress serverAddress = InetAddress.getByName("localhost");
            // Change to the server's IP address if not local

            DatagramPacket sendPacket = new DatagramPacket(sendData,
            sendData.length, serverAddress, 9876);
            socket.send(sendPacket);

            System.out.println("Sent message: " + message);

            byte[] receiveData = new byte[1024];
            DatagramPacket receivePacket = new DatagramPacket(receiveData,
            receiveData.length);
            socket.receive(receivePacket);

            //          String acknowledgment = new String(receivePacket.getData(),
            0, receivePacket.getLength());
            //          System.out.println("Received acknowledgment: " +
            acknowledgment);

            socket.close();
        } catch (Exception e) {
            e.printStackTrace();
        }
    }
}
```

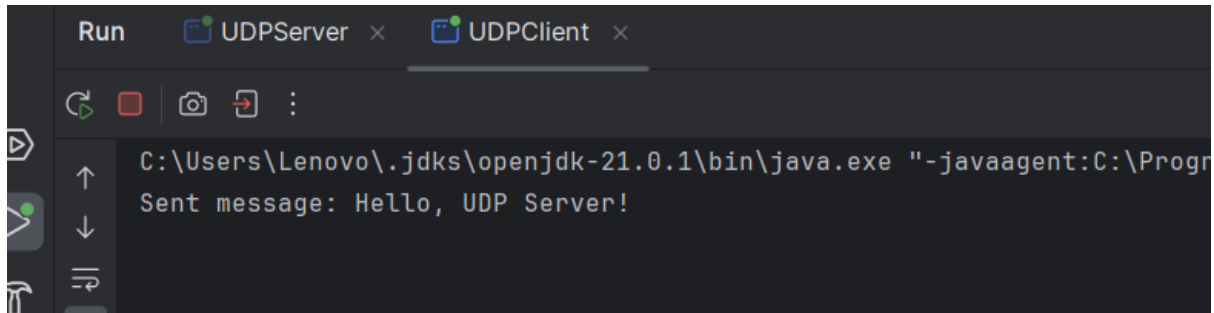
```
}  
}
```

Server

```
import java.net.DatagramPacket;  
import java.net.DatagramSocket;  
  
public class UDPServer {  
    public static void main(String[] args) {  
        try {  
            DatagramSocket socket = new DatagramSocket(9876); // Create a  
            UDP socket on port 9876  
  
            byte[] receiveData = new byte[1024];  
  
            while (true) {  
                DatagramPacket receivePacket = new  
DatagramPacket(receiveData, receiveData.length);  
                socket.receive(receivePacket);  
  
                String message = new String(receivePacket.getData(), 0,  
receivePacket.getLength());  
                System.out.println("Received message: " + message);  
  
                // Add your logic here to process the received message.  
  
                // Send an acknowledgment back to the client  
                String acknowledgment = "Message received by server";  
                byte[] sendData = acknowledgment.getBytes();  
                DatagramPacket sendPacket = new DatagramPacket(sendData,  
sendData.length, receivePacket.getAddress(), receivePacket.getPort());  
                socket.send(sendPacket);  
            }  
        } catch (Exception e) {  
            e.printStackTrace();  
        }  
    }  
}
```

Output

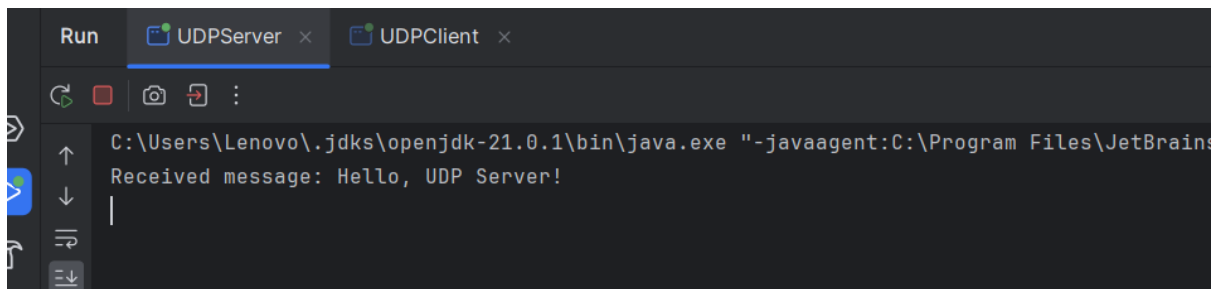
Client



The screenshot shows the Run console for the UDPClient application. The console output displays the command used to run the application and the message sent to the server.

```
Run  UDPServer x  UDPClient x  
C:\Users\Lenovo\.jdk\openjdk-21.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA\lib\idea_rt.jar" 127.0.0.1 8080  
Sent message: Hello, UDP Server!
```

Server



The screenshot shows the Run console for the UDPServer application. The console output displays the command used to run the application and the message received from the client.

```
Run  UDPServer x  UDPClient x  
C:\Users\Lenovo\.jdk\openjdk-21.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA\lib\idea_rt.jar" 127.0.0.1 8080  
Received message: Hello, UDP Server!  
|
```