DNSServer.java

```
import java.net.*;
import java.util.HashMap;
public class DNSServer {
   public static void main(String[] args) {
      int port = 9876;
      HashMap<String, String> dnsTable = new HashMap<>();
      dnsTable.put("www.google.com", "142.250.190.68");
      dnsTable.put("www.yahoo.com", "98.137.11.163");
      dnsTable.put("www.example.com", "93.184.216.34");

      try (DatagramSocket serverSocket = new DatagramSocket(port)) {
         System.out.println("DNS Server started on port " + port);

         byte[] receiveBuffer = new byte[1024];
         byte[] sendBuffer;
         while (true) {
          DatagramPacket receivePacket = new DatagramPacket(receiveBuffer,
receiveBuffer.length);
            serverSocket.receive(receivePacket);

            String domainName = new String(receivePacket.getData(), 0,
receivePacket.getLength());
            System.out.println("Received query for domain: " + domainName);

            String ipAddress = dnsTable.getOrDefault(domainName.trim(), "Domain not
found");
            sendBuffer = ipAddress.getBytes();
            InetAddress clientAddress = receivePacket.getAddress();
            int clientPort = receivePacket.getPort();
            DatagramPacket sendPacket = new DatagramPacket(sendBuffer,
sendBuffer.length, clientAddress, clientPort);
```

```
            serverSocket.send(sendPacket);

            System.out.println("Sent response: " + ipAddress);
          }
        } catch (Exception e) {
          e.printStackTrace();
        }
    }
}
```

DNSClient.java

```
import java.net.*;
import java.io.*;
public class DNSClient {
   public static void main(String[] args) {
      String serverAddress = "localhost";
      int port = 9876;

      try (DatagramSocket clientSocket = new DatagramSocket();
           BufferedReader console = new BufferedReader(new
InputStreamReader(System.in))) {

         System.out.print("Enter domain name to query: ");
         String domainName = console.readLine();

         byte[] sendBuffer = domainName.getBytes();
         InetAddress serverIP = InetAddress.getByName(serverAddress);
        DatagramPacket sendPacket = new DatagramPacket(sendBuffer,
sendBuffer.length, serverIP, port);
         clientSocket.send(sendPacket);
         byte[] receiveBuffer = new byte[1024];
```

```
        DatagramPacket receivePacket = new DatagramPacket(receiveBuffer,
receiveBuffer.length);

        clientSocket.receive(receivePacket);

        String response = new String(receivePacket.getData(), 0,
receivePacket.getLength());

        System.out.println("Server response (IP Address): " + response);

    } catch (Exception e) {

        e.printStackTrace();

    }

  }

}
```

Output: