Lab 5 C19704439 Conor Farrell

Client

```
import java.net.*;
import java.io.*;
import java.util.Scanner;
public class client {
   public static void main(String[] args) {
      try {
         Socket client = new Socket("localhost", 5000);
         System.out.println("Client is connected to Server");
         ObjectOutputStream out = new ObjectOutputStream(client.getOutputStream());
         ObjectInputStream in = new ObjectInputStream(client.getInputStream());
         Scanner input = new Scanner(System.in);
         int num1;
         //noinspection InfiniteLoopStatement
         while(true) {
            System.out.println("Enter your Message");
            num1 = input.nextInt();
            out.writeObject(num1);
            String message = ( String ) in.readObject();
            System.out.println ("Data from Server:  " + message);
            switch (num1) {
               case 1 -> {
                  int num2 = input.nextInt();
                  int num3 = input.nextInt();
                  out.writeObject(num2);
                  out.writeObject(num3);
                  int result = (int) in.readObject();
                  System.out.println("Data from Server:  " + result);
               }
               case 2 -> {
```

```
                double num4 = input.nextDouble();
                out.writeObject(num4);
                double squareAns = (double) in.readObject();
                System.out.println("Data from Server:  " + squareAns);
            }
            case 3 -> {
                int num5 = input.nextInt();
                int num6 = input.nextInt();
                out.writeObject(num5);
                out.writeObject(num6);
                int powerAns = (int) in.readObject();
                System.out.println("Data from Server:  " + powerAns);
            }
            case 0 -> {
                out.writeObject(num1);
                System.out.println("Connection closing, Goodbye");
                client.close();
            }
            default -> throw new IllegalStateException("Unexpected value: " + num1);
          }
          }
        }
      catch(Exception ex){
        System.out.println("Error");
      }
    }
}
```

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Server

```
import java.net.*;
import java.io.*;
public class server {
   public static void main(String[] args) {
      try {
         ServerSocket server = new ServerSocket(5000, 10); // create ServerSocket
         System.out.println("Server is Running on port 5000");
         Socket connection = server.accept();
         ObjectOutputStream out = new ObjectOutputStream(connection.getOutputStream());
         ObjectInputStream in = new ObjectInputStream(connection.getInputStream());
         String message;
         int num1;
         //noinspection InfiniteLoopStatement
         while (true) {
            num1 = (int) in.readObject();
            switch (num1) {
               case 1 -> {
                  message = "Please enter 2 numbers";
                  out.writeObject(message);
                  int num2 = (int) in.readObject();
                  int num3 = (int) in.readObject();
                  int result;
                  result = num2 + num3;
                  out.writeObject(result);
                  break;
               }
               case 2 -> {
                  message = "Please enter 1 numbers";
                  out.writeObject(message);
```

```
                double num4 = (double) in.readObject();
                double squareAns = Math.sqrt(num4);
                out.writeObject(squareAns);
                break;
            }
            case 3 -> {
                message = "Please enter 2 numbers";
                out.writeObject(message);
                int num5 = (int) in.readObject();
                int num6 = (int) in.readObject();
                int powerAns = (int) Math.pow(num5, num6);
                out.writeObject(powerAns);
                break;
            }
            case 0 -> {
                out.writeChars("Connection closing, Goodbye");
                connection.close();
            }
            default -> throw new IllegalStateException("Unexpected value: " + num1);
          }
        }
      }
        catch (Exception ex) {
          System.out.println("Error");
      }
    }
}
```

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