**Project2Task3Client**

import java.net.\*;  
import java.io.\*;  
import java.util.Scanner;  
  
// Name: Leo Lin  
// Andrew ID: hungfanl  
public class RemoteVariableClientUDP{  
 static DatagramSocket *aSocket* = null;  
 static int *serverPort*;  
 static InetAddress *aHost*;  
 public static void main(String args[]){  
 // Showing that the client UDP is running  
 Scanner readInput = new Scanner(System.*in*);  
 System.*out*.println("The client is running.");  
 // get the port number from the client  
 System.*out*.println("Please enter server port:");  
 *serverPort* = Integer.*parseInt*(readInput.nextLine());  
 try {  
 // collecting IP address  
 *aHost* = InetAddress.*getByName*("localhost");  
 *aSocket* = new DatagramSocket();  
 }catch (SocketException e) {System.*out*.println("Socket: " + e.getMessage());  
 }catch (IOException e){System.*out*.println("IO: " + e.getMessage());  
 }  
 String option;  
 System.*out*.println();  
 // Keep on looping until the user insert option 4  
 do{  
 // Initiate the getOption function  
 option = *getOption*();  
 // If user doesn't insert 4, then pass function will pass the string to the server  
 if(!option.equals("4")){  
 int result = *pass*(option);  
 System.*out*.println("The result is " + result +".");  
 System.*out*.println();  
 }  
 }while(!option.equals("4"));  
  
 System.*out*.println("Client side quitting. The remote variable server is still running.");  
 if(*aSocket* != null) *aSocket*.close();  
  
  
 }  
  
 // This function returns a string concatenating type, id, number  
 // And returns 4 if the user insert 4.  
 public static String getOption(){  
 Scanner readInput = new Scanner(System.*in*);  
 String[] options = {"Add a value to your sum.","Subtract a value from your sum.","Get your sum.","Exit client."};  
 for(int i = 0; i < options.length; i++){  
 System.*out*.println((i+1) + ". " + options[i]);  
 }  
 int choice = Integer.*parseInt*(readInput.nextLine());  
 String number = "0";  
 String id;  
 // return string based on user's insertion.  
 switch(choice) {  
 // if the user insert 4, then return 4 to exit the client program  
 case 4:  
 return String.*valueOf*(choice);  
 case 1:  
 System.*out*.println("Enter value to add:");  
 number = readInput.nextLine();  
 break;  
 case 2:  
 System.*out*.println("Enter value to subtract:");  
 number = readInput.nextLine();  
 break;  
 default:  
 }  
 System.*out*.println("Enter your ID:");  
 id = readInput.nextLine();  
 return String.*valueOf*(choice) + "," + id + "," + number;  
  
 }  
 //This function takes the concatenated string from the client and pass it to the server  
 public static int pass(String s){  
 String replyString = null;  
 try {  
 byte [] m = String.*valueOf*(s).getBytes();  
 DatagramPacket request = new DatagramPacket(m, m.length, *aHost*, *serverPort*);  
 // send the request  
 *aSocket*.send(request);  
 byte[] buffer = new byte[1000];  
 DatagramPacket reply = new DatagramPacket(buffer, buffer.length);  
 // receive the reply from the server side and print it out.  
 *aSocket*.receive(reply);  
 replyString = new String(reply.getData()).substring(0, reply.getLength());  
 // If replyString is "halt!" break the while loop  
 }catch (SocketException e) {System.*out*.println("Socket: " + e.getMessage());  
 }catch (IOException e){System.*out*.println("IO: " + e.getMessage());  
 }  
 return Integer.*parseInt*(replyString);  
 }  
}