**Project2Task4Client**

import java.net.\*;  
import java.io.\*;  
import java.util.Scanner;  
// Name: Leo Lin  
// Andrew ID: hungfanl  
public class RemoteVariableClientTCP {  
 static Socket *clientSocket* = null;  
 static int *serverPort*;  
 static BufferedReader *in*;  
 static PrintWriter *out*;  
 public static void main(String args[]) {  
 Scanner readInput = new Scanner(System.*in*);  
 // arguments supply hostname  
 System.*out*.println("The client is running.");  
 // get the port number from the client  
 System.*out*.println("Please enter server port:");  
 *serverPort* = readInput.nextInt();  
 try {  
 *clientSocket* = new Socket("localhost", *serverPort*);  
 BufferedReader typed = new BufferedReader(new InputStreamReader(System.*in*));  
 String option;  
 System.*out*.println();  
 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.");  
 } catch (IOException e) {  
 System.*out*.println("IO Exception:" + e.getMessage());  
 } finally {  
 try {  
 if (*clientSocket* != null) {  
 *clientSocket*.close();  
 }  
 } catch (IOException e) {  
 // ignore exception on 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 data = null;  
 try {  
 *in* = new BufferedReader(new InputStreamReader(*clientSocket*.getInputStream()));  
 *out* = new PrintWriter(new BufferedWriter(new OutputStreamWriter(*clientSocket*.getOutputStream())));  
 *out*.println(s);  
 *out*.flush();  
 data = *in*.readLine(); // read a line of data from the stream  
 System.*out*.println("Received: " + data);  
 } catch (IOException e) {  
 System.*out*.println("IO Exception:" + e.getMessage());  
 }  
 return Integer.*parseInt*(data);  
 }  
}