Operating Systems Project

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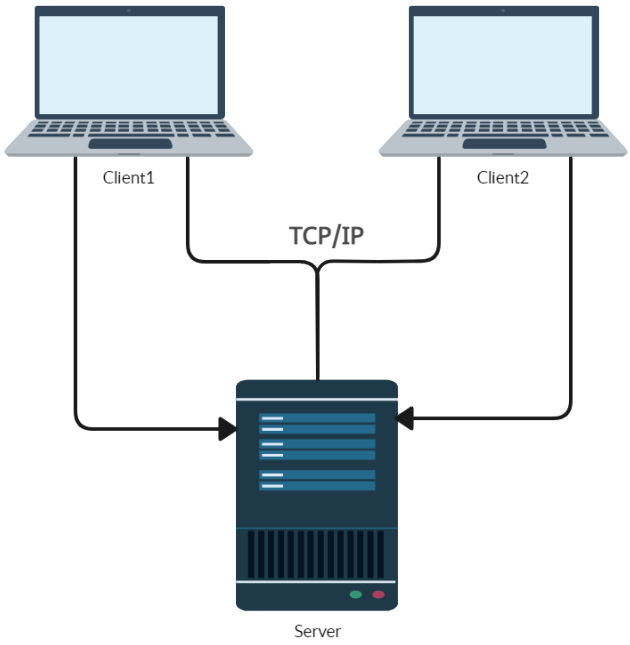
Introduction

For the objective of the report we wanted to create the classic game of rock paper scissors while implementing some of the ideas that we have learned during the semester in operating systems. We used multithreading and socket communication to create this because we learned the ins and outs of it during this class. The name of our project is Rock, Paper, Scissors. The rules for the game are the following; paper wins over the rock option, rock wins over the scissors option, and scissors wins over the paper option. These are the same rules that the classic has.

Architecture Design



The server will handle all the processes and the clients just need to connect to the server. The client will send messages to the server based on the choice that the player makes. The server will start the connection for the game and the players will start themselves on separate threads. The server is responsible for deciding the winner of the game and sending it back to the client. We are using the client server architecture to make the game run and divide the processes evenly along the machine.

Functional Requirements

- The system must use client server architecture.
- The program must be written in java.
- The server must be able to handle two connections for the game to run.
- The server must decide the game winner and loser of the game and send it to the players.
- The game rules must be well defined and state the rules for the players.
- The game must have socket connections and the server and game must be on different processes.

GUI Design

For our design we wanted to use a design where the user could simply click on the screen and that would send the data to the server. We also wanted the game to display the rules so the user would know them if they have never played the game before. The design was simple, show the options, have the player click on the option and display the results based on what the user chose.

Implementation Environments

We used Eclipse to run the game and coded the program in Java.

Screenshots