**Communication Protocol**

The Compiler Coalition

# Introduction

In this paper there is the illustration of the communication protocol used in the game “MyShelfie”.

The problem consists of sending information between client and server, so that the players can be updated on changes of the game.

The determinant factor on which the architecture is based is the advanced feature “multiple games”. The main problem faced on the implementation of this feature was that the server controller needed to be able to determine the game that the client belonged to.

There was also the need for sending messages that were different from one another, that is because the game has different states and there are possible actions for each of these states.

## Implementation

The implementation was done using the TCP protocol through the use of sockets.

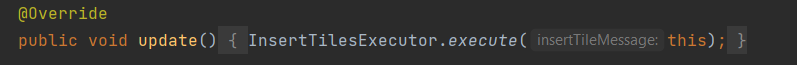
Once the server is activated on the port 28888, the client can instantiate a connection that will result in the exchange of messages.

When the server accepts a connection it handles it using the SocketClientHandler class that is responsible for listening to messages from each client, it also allows the server to send messages to the client.

## Messages to server

Each message to server must extend the abstract class “MessageToServer” and implement the method update(). This method is called in the server when the message arrives and is used to execute the logic behind the message.

This is an example for the class InsertTileMTS:

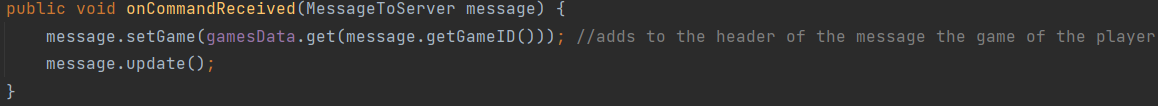


As shown, the execution is delegated to an executor for the specific message.

The data can vary between messages, since each executor knows the type of message in advance. This way the messages are easy to extend and to manage, respecting the open closed and single responsibility principles.

Choose the right game:

The problem with multiple games is that the server must be able to divide the traffic to the right game. This issue was handled by creating the GamesManager class that is singleton. Each time a message arrives to the SocketClientHandler, the onCommandReceived method is called:



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