

Communication protocol

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Contents

1	Network use and management	2
2	Data format	2
3	Communication functions & routines	3
3.1	Login	3
3.2	Starting Match	3
3.3	Message	4
3.4	Update View	4
3.5	Choose Action	4
3.6	Choose Direction	4
3.7	Choose Position	5
3.8	Choose Power	5
3.9	Choose Room	5
3.10	Choose Weapon	5
3.11	Discard Power	6
3.12	Grab Weapon	6
3.13	Move Enemy	6
3.14	Move Player	6
3.15	Reload	7

1 Network use and management

The main goal of the design for our controller was to use both RMI and Sockets interchangeably. We also decided to let the server control the whole flow of the information exchange after the client asked to connect (Login). As a result of this, our communication protocol consists in a list of abstract functions that can be called by the server to send data or ask something to the client, and which are implemented for both RMI and Sockets.

2 Data format

Every function which expects a reply passes a list of possible answers and a boolean `mustChoose` value, that lets the user choose nothing when it's set to `false`.

RMI

There is no need to define the format of the exchanged data when implementing the RMI side, since the communication is achieved with simple function calls (RMIs handle low level communication by themselves under the hood).

Socket

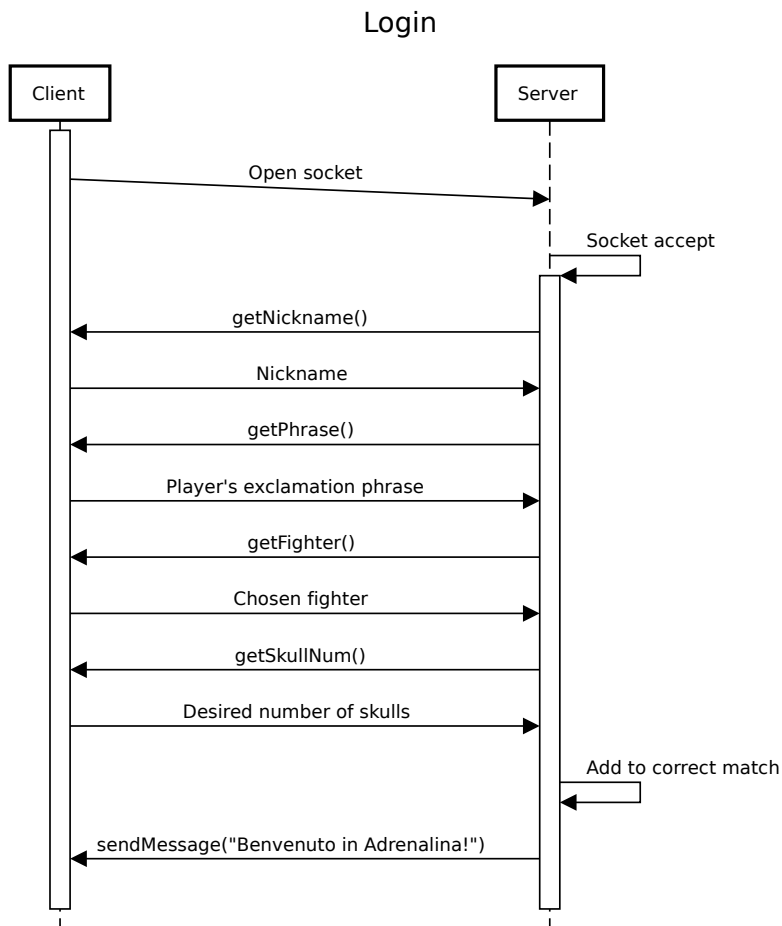
When implementing the Socket side, we defined a single `Payload` class to hold the needed data for every communication function.

After a `Payload` instance is ready to be sent, we serialize it in JSON and send it through the Socket's TCP connection. Then, the client creates a new `Payload` instance with the response data and sends it back to the server.

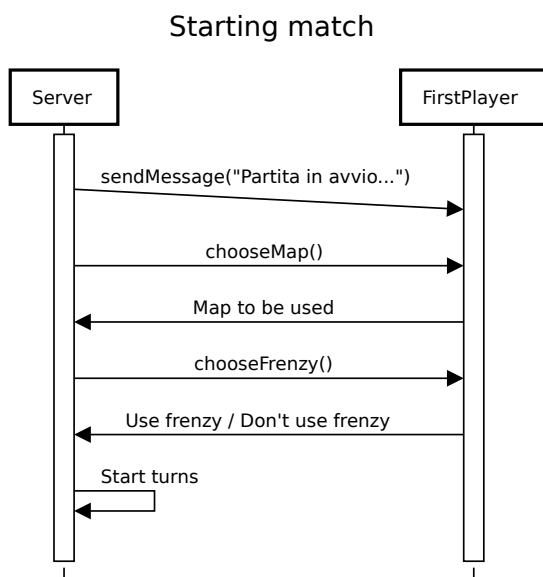
```
public class Payload {  
    private Interaction type;  
    private String parameters;  
    private Player enemy;  
    private boolean mustChoose;  
}
```

3 Communication functions & routines

3.1 Login

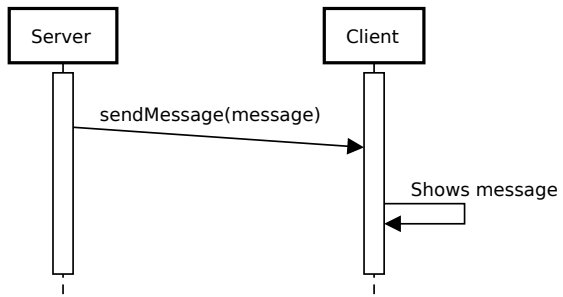


3.2 Starting Match



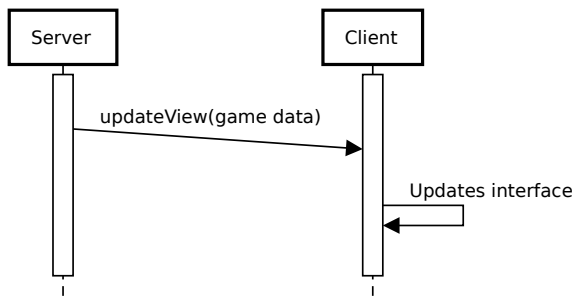
3.3 Message

Message



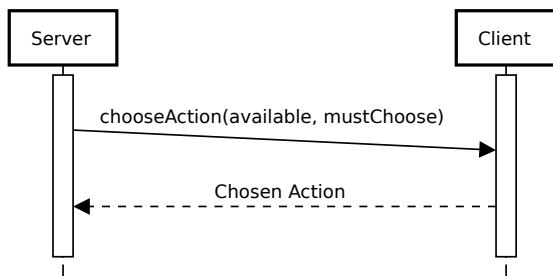
3.4 Update View

Update View



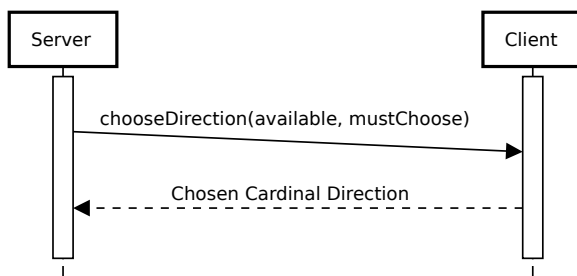
3.5 Choose Action

Choose Action



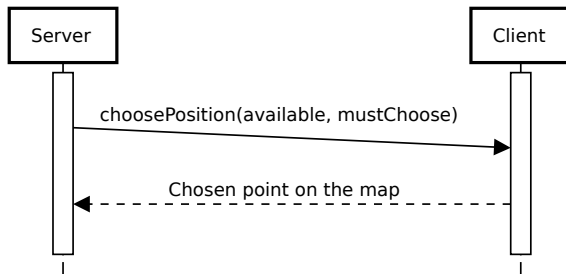
3.6 Choose Direction

Choose Cardinal Direction



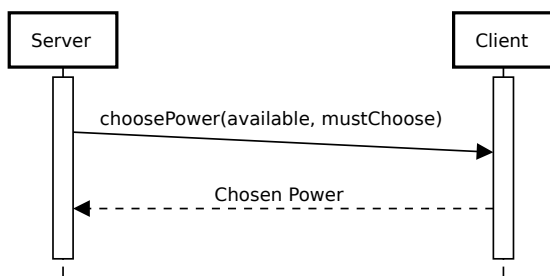
3.7 Choose Position

Choose Position



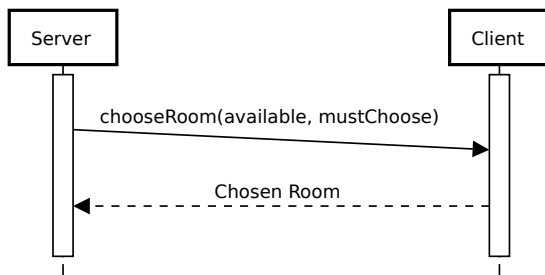
3.8 Choose Power

Choose Power



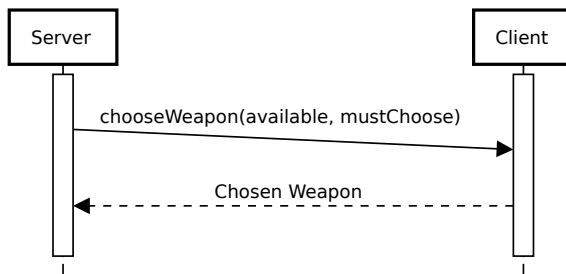
3.9 Choose Room

Choose Room



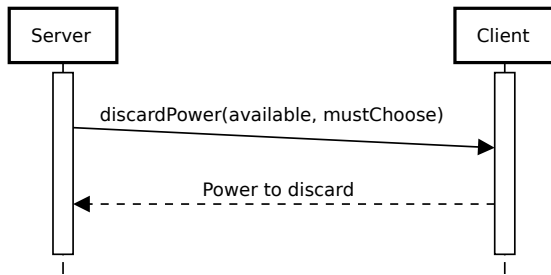
3.10 Choose Weapon

Choose Weapon



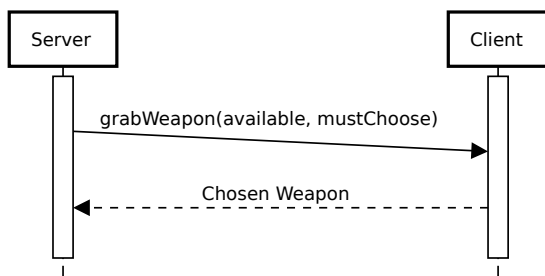
3.11 Discard Power

Discard Power



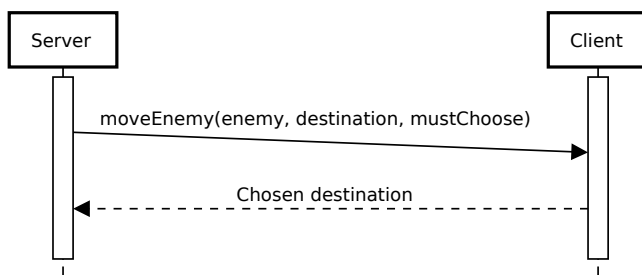
3.12 Grab Weapon

Grab Weapon



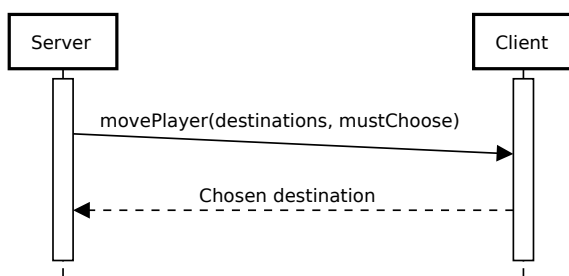
3.13 Move Enemy

Move Enemy



3.14 Move Player

Move Player



3.15 Reload

Reload Weapon

