

COMMUNICATION PROTOCOL DOCUMENTATION

1. MESSAGE INTERFACE

Each message type implements the Message interface, which extends Serializable and includes the following methods:

- void send(Client user): sends this message to the specified client
- void send (List<Client> users): sends the message to more than one client
- void switchAndFillView(): this is a strategy pattern. Based on the message implementation, this method will behave differently once it is called from the client. It will switch the client's current view to the view relative to that message, and fill it with the information contained in the message (parts of the game model)
- Boolean isPing(): only for ping messages this returns true
- isRepliable(): methods that implement the Repliable abstract class return true.

1.1 REPLIABLE MESSAGES

The Repliable abstract implements Message, and is extended by the message types that the client can reply to. It consists in two main methods:

- setReply
- getReply

In fact, all the implementations of Repliable will have a String reply field, which can be filled from the client. The same message is then sent back to the server.

2. MESSAGE TYPES

2.1 FirstClientMessage: Repliable=True.

Messages of this type are sent only to the first client before the login phase. They allow the first player to choose the number of players and the game variant (expert/normal).

2.2 Login Message: Repliable = true.

Sent during the login phase to all of the players (2/3) depending on initial choice. When a client receives this, it will call this.switchAndFillInfo() and it will switch to the login screen. From this, clients can enter their name, choose number of wizard and tower color.

2.3 GenInfoMessage: Repliable = false.

This message contains the parts of the model which players want to see during all of the game (mainly the game map and the players' schools). Every time a player completes their turn, a message of this type is sent to all, so that during their turn players can see the state of the game to take decisions. Player can switch to the view relative to this message at any time by clicking a button.

2.4 PlanningPhaseMessage: Repliable = true.

This is sent to one player at a time, following the right order, during the planning phase of each round. It contains the available assistant for each players, and informs them of the ones that were already played. The player can click on a button to send a String reply. This will inform the server of their choice. The server will then send another message to the next player until planning phase is finished.

2.5 ActionPhaseMessage: Repliable = true.

This is sent to the player who is currently doing the action phase. It allows the player to choose one of the options for this phase. These are:

1. moving a student from entrance to dining room.
2. moving a student from entrance to islands.
3. playing a character.

Once received, it switches the client to the correct view to select one of these 3, and lets the player choose by clicking a button.

2.6 CloudMessage: Repliable = true. This is sent for the cloud selection phase, in which players will fill their entrance from one of the clouds. Similarly to the others, it will switch to a view where one of the clouds can be selected through a button.

2.7 NoReplyMessage: Repliable = false. Sent mainly for when something goes wrong, or a player does an unacceptable move. It will enable a dialog on top of the current view that displays a message. The player cannot reply to it.

2.8 PingMessage: Repliable = false. This is sent periodically from the server to inform the client that the connection is still active. Every time this is received, a timer is reset in the client. If the timer ever ends, the client will stop the game.

2.9 EndGameMessage: Repliable = false. This contains the info to display when the game is over, so the winner (or winners in case of tie) and the win condition. It is sent to every client.