COMMUNICATION PROTOCOL:

After the server has started with its own port number, a client can connect by providing the server's port number and its IP address. The server accepts the request sending to the client a Welcome message containing the lobbies and their parameters. The client can then choose to create a new Game by sending a GameParams message with the type of game, player number and his credentials or to join a lobby by sending a Join message. These messages contain several parameters such as the NickName, the Mage. The server verifies the uniqueness of these parameters, if they are wrong an Error message is sent.

After the connection is initialized the server will send a Ping to which the client will answer with a Pong (messages with empty body).
Every 5 seconds the server will send a Ping to every client and will wait for a Pong answer from all clients connected. If a client doesn't answer to 5 consecutive pings the server will assume that the connection must be closed.
A client can send to the server a Disconnect message to notify that he wants to exit the game.
After a client is disconnected he can rejoin the match (using Join message) by choosing his old nickname.

If the server doesn't receive an answer from any of the clients, it will keep sending pings until a timer runs out. After that it will close all connections and end the match.
When all clients needed are connected the game starts and the server sends a GameStart message followed by a SelectAssistant message in a specific order to every client that has to answer with a ChooseAssistant message. When the server receives all the messages it will calculate the turn order.

The turn is composed of the following phases:
1. The server notifies the correct client by sending a MoveStudent, the client will send 3 messages that can be MoveToIsland or EntranceToHall.
2. The server notifies the correct client by sending a MoveMotherNature, the client will send a MoveMN message.
3. The server notifies the correct client by sending a SelectCloud,the client will send a ChooseCloud message.

If the game is in Expert mode, during all these phases the client can send a PlayCharacter in order to activate a Character. The server verifies the disponibility of this Character and if the player has enough coins, if at least one of these conditions isn't respected an Error message is sent. Once the Character is activated, the following messages sent by the client will determine the Character's ability that will be used during the turn.

There are four types of messages that can be sent:
- ChooseIsland: If ChooseIsland is sent and the active Character is the number 3, the influence is calculated on the selected island as if Mother Nature was there, if instead the active Character is the number 5, a No Entry tile is placed on the selected island.

- ChooseColor: if ChooseColor is sent and the active Character is the card 9, is set the color that will not be used for calculating the influence, if instead the active Character is the number 11, a student of this color is moved from the card to the SchoolBoard's hall, finally if the active Character is the number 12, three students of the selected color are put back in the bag.
- ChooseTwoColors: if ChooseTwoColors is sent and the active Character is the number 7, the two selected students change their positions: the first one from entrance to card and the second one the other way, if instead the activated Character matches the description of card 10, the two selected students change their positions: the first one from hall to entrance and the second one the other way.
- SpecialMoveIsland: if SpecialMoveIsland is sent and the active Character is the number 1, the selected student is placed on the chosen island.

At the end of a turn the server will ensure that all the necessary moves have been performed and only in that case it will send an EndTurn message.

All messages that are sent during the turn are checked by the server to ensure that the action is legal, it's appropriate for the current phase and the message is sent from the current player, in case of a failed check an Error message containing the error's description will be sent.

Under certain circumstances the game must end after the current round so the server will notify all clients with a GameMustEnd message.
In the event that a win condition is satisfied the server will send a GameEnded message containing the winner.