

# Message codes:

All messages written on the socket stream have codes to identify which type of message has been sent.

There are 2 types of messages: normal messages and object messages, the first ones only have a code, a string and, if the message is directed only to a specific client, a nickname associated with a single player.

Object messages extend Messages, the string is substituted with the static string "Object" and the serialized object is sent through the socket.

Legenda:

1xx - Informative messages

2xx - Success messages, usually not printed

3xx - Ping messages and acks messages, not printed

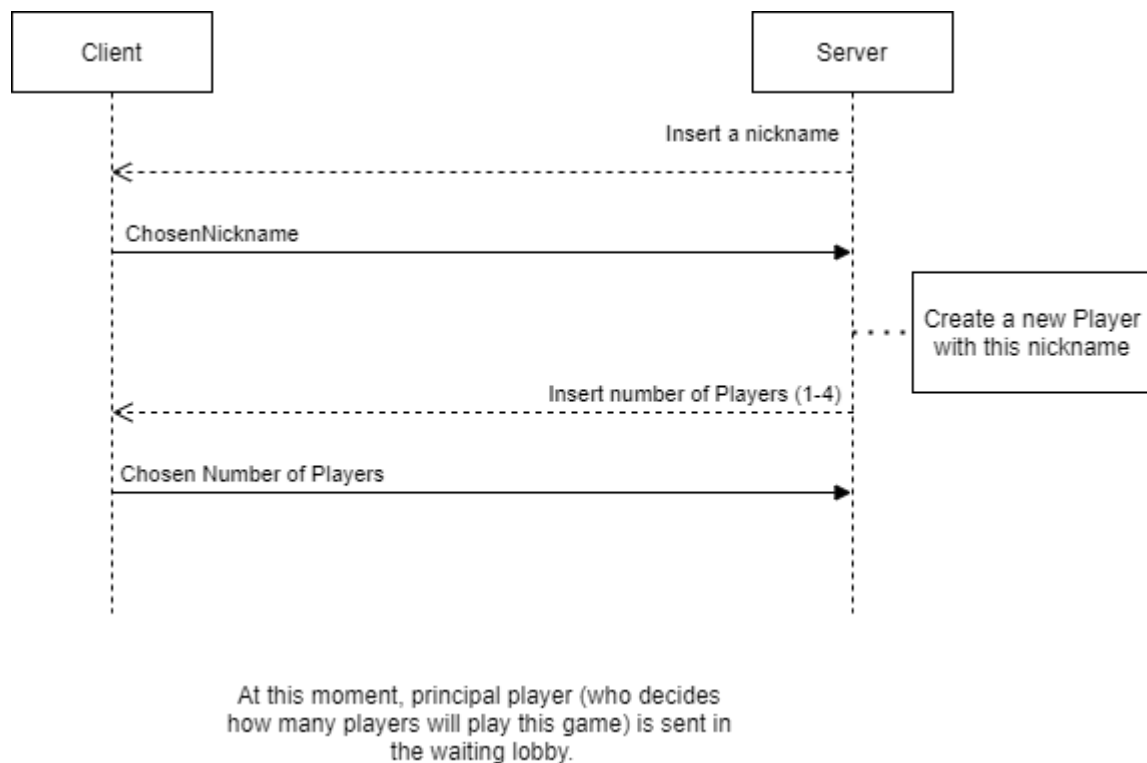
4xx - Client errors

5xx - Server errors

6xx - Server messages containing an object, the two less significant figures identify the object.

## Data Diagram

## Initial Phase



In the initial phase first Server starts.

Players run their Client and try to connect to the Server via IP and Socket port.

Here there are all the messages:

- "Insert a nickname": plain text to ask players their nicknames.
- "ChosenNickname": plain text in a String sent by player to the Server.
- "Insert number of Players (1-4)": plain text sent only to the first player connected.
- "ChosenNumberOfPlayers": Integer that indicates number of players of this game.

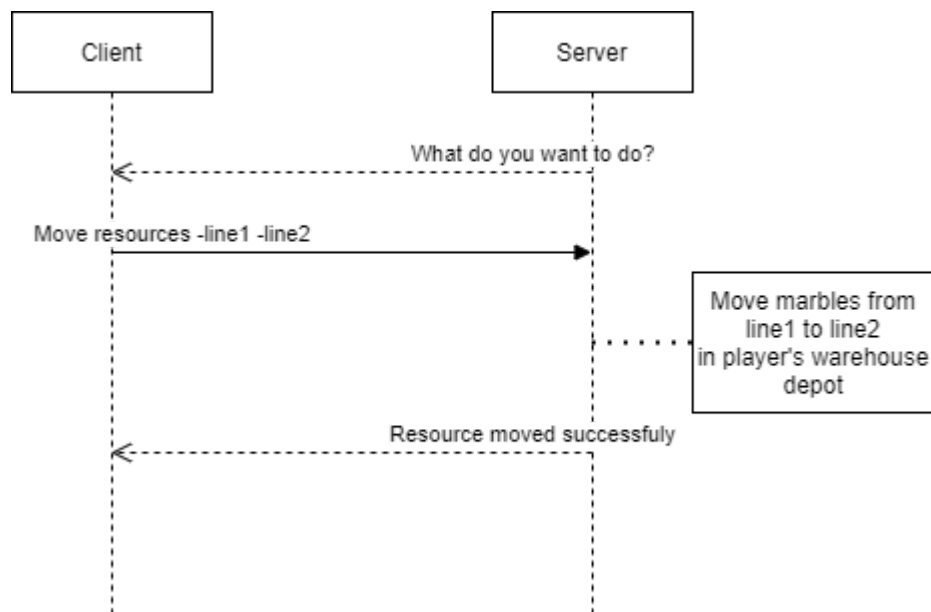
For other players there will be only the first and the second message.

When Server creates new Object Player, the player will be sent in the waiting lobby.

## Game Phase

In Game Phase Server will sent always the first message: "What do you want to do?" and it will wait player response.

### *Move Resources:*



### Messages:

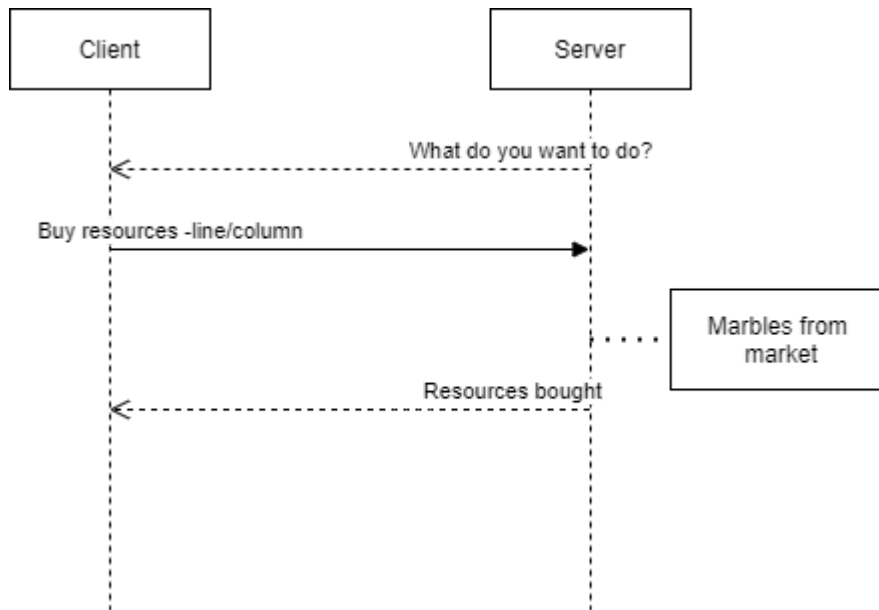
- "Move resources -line1 -line2": plain text with "Move resources" to ask the Server to switch resources from Warehouse Depot line1 (integer) to line2(integer) and vice versa.
- "Resource moved successfully": plain text that informs the player that moving action has successfully done.

### Errors:

#### If the player insert:

- Not a number for line1 and line2: Server will send plain text "Not a number".
- An invalid value for line1 or line2: "Choose valid warehouse lines to switch".
- If values inserted by player do not pass controls in the moveresources method: "Can't switch these lines".

### *Buy resources:*



#### Messages:

- “Buy resources -line/column”: plain text and integer (line OR column) to ask Server to buy resources from this line/column of Market Structure.
- “Resources bought”: Server will respond to inform player of the successfully purchase.
- “Faith increased”: plain text sent to player If one of the marbles obtained from Market structure is a red one.

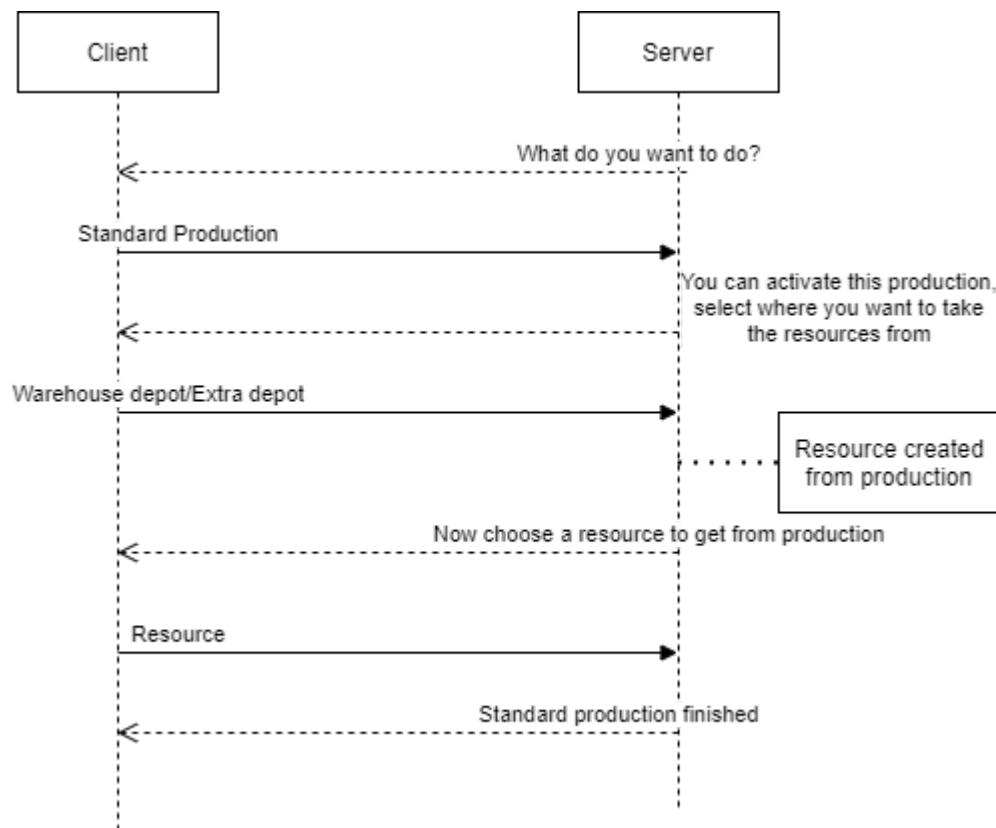
If the players have one or two Leader card of conversion there are more messages to handle:

- “Select if you want to transform or discard the white marble”: plain text sent to player to discard or to convert the white marble obtained from Market structure.
- “Select the resource you want to convert the marble into”: plain text sent to player to decide the conversion of the white marble.

#### Errors:

- “Not a number”: Server will send this message if the player inserted a value that is not an integer for line/column.
- “Index out of bounds”: If the player inserted a value that is not in the interval  $1 < \text{line} < 3$  or  $1 < \text{column} < 4$ .

*Activate standard production:*



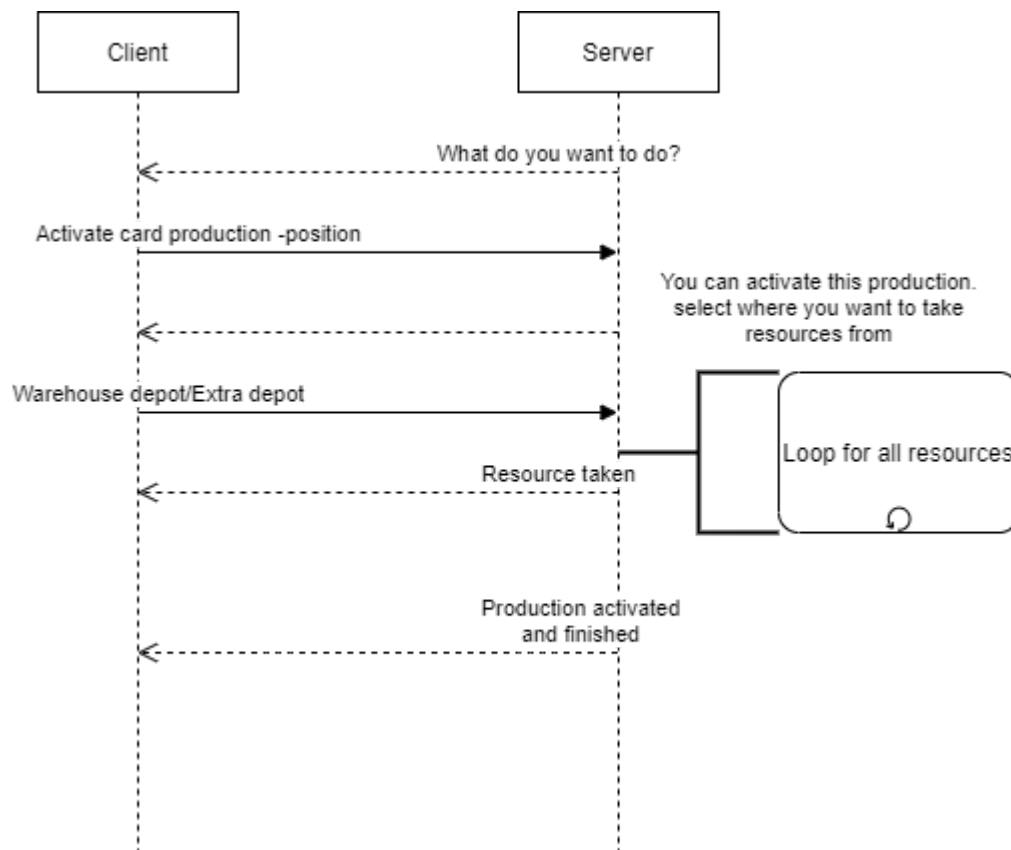
#### Messages:

- "Standard Production": plain text to ask server to start a standard production.
- "You can activate this standard production, select where you want to take the resources from": plain text.
- "Warehouse depot" OR "Extra depot": from where the player wants to take resources.
- "Now choose a resource to get from production": ask the player the resource that he wants to obtain from the production.
- "Resource": plain text of the resource wanted (Coin, Stone, Servant, Shield)
- "Standard production finished": Server inform the player that the standard production is successfully done.

#### Errors:

- "Select a valid resource location (Warehouse depot or Extra depot)": if the player inserts a location that does not exist.
- "Select a valid resource": if the player did not insert a valid resource.

*Activate card production:*



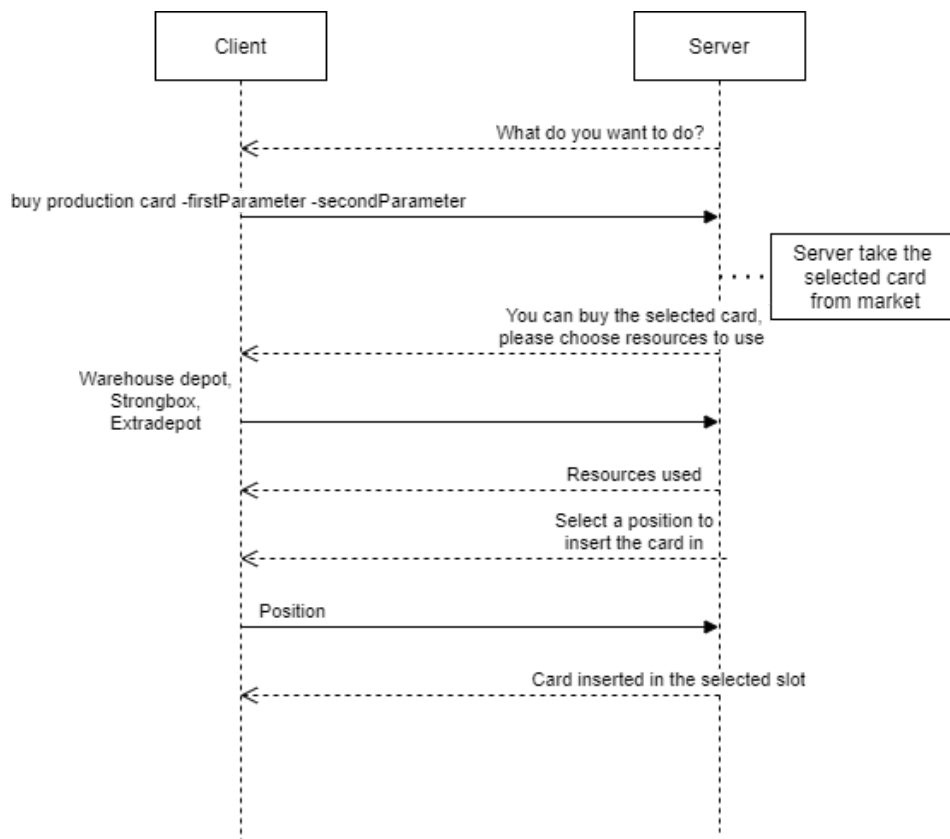
#### Messages:

- "Activate card production -position": plain text to activate a card production, position is an integer that represents the position of production card slot.
- "You can activate this production, select where you want to take resources from": plain text.
- "Warehouse depot" OR "Extra depot".
- "Resource taken": this message and the previous are sent in a loop where the player has not chosen all the needed resources.
- "Production activated and finished": plain text.

#### Errors:

- "Index out of bounds": if position is not in the interval  $1 < \text{position} < 3$ .
- "Not a number": if position is not an integer.
- "Select a valid resource location (Warehouse depot or Extra depot)": if the player inserts a location that does not exist.

*Buy production Card:*



### Messages:

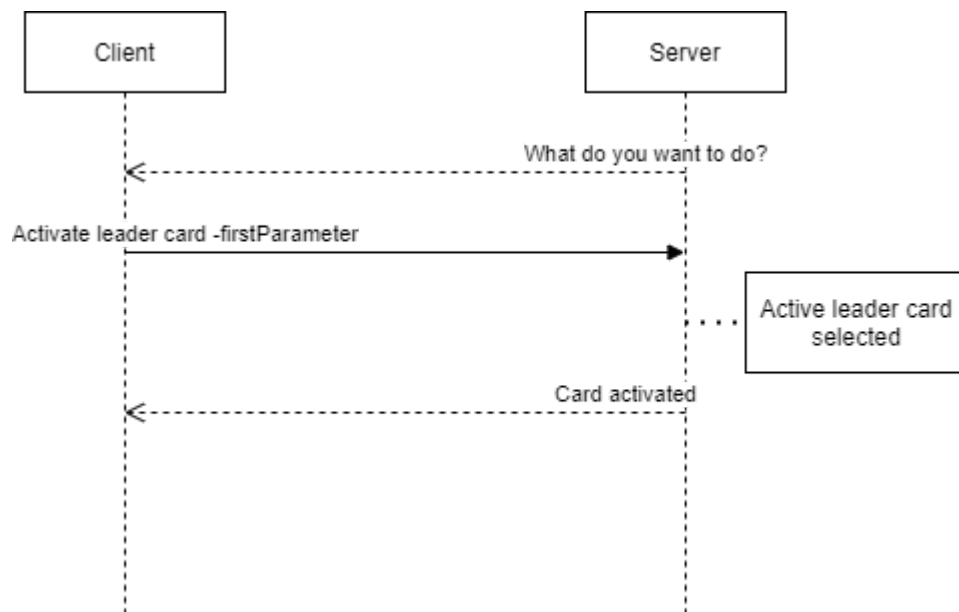
- "Buy production card -firstParameter -secondParameter": plain text with two integers (firstParameter and secondParameter). firstParameter indicates the row and secondParameter indicates the column where is the card in the Card Market.
- "You can buy the selected card, please choose resources to use": plain text.
- "Warehouse depot" OR "Strongbox" OR "Extra depot": plain text sent by player to choose the resource location.
- "Resource used": plain text.
- "Select a position to insert the card in": plain text sent by Server to clarify where the player wants to insert the card in his Production Card Slot.
- "Position": Integer that indicates the position in player's Production Card Slot.
- "Card inserted in the selected slot": plain text to warn player that purchase is completed successfully.

## Errors:

- "This resource isn't available in your Warehouse depot": this plain text is sent to player when he has not this resource in his Warehouse depot.
- "This resource isn't required": this plain text is sent if player choose a resource that is not required for this Production card purchase.
- "Select a valid resource (Coin, Stone, Servant or Shield)": plain text sent to player if he did not select a valid resource.
- "Wrong resource": plain text sent to player if he chooses a wrong resource to use.
- "Already empty": plain text sent to player if his Extra depot is empty.
- "This resource isn't available in your Strongbox": plain text sent to player if the resource chosen is not available in his Strongbox.
- "This resource isn't required": plain text sent to player if the resource chosen is not required to buy this card.
- "Select a valid location (Warehouse depot, Extra depot or Strongbox)": plain text sent to player if he chooses an invalid location.
- "Not a number": if position is not an integer.
- "There are no cards left on the selected pile": plain text sent to player when he is trying to buy a card from a pile where there are not any cards left.
- "No more space": plain text sent to player when he has already had three cards of the same level.
- "No level 1 card active": plain text sent to player when he is trying to buy a level 2 card when he has not a level 1 card activated.
- "No level 2 card active": plain text sent to player when he is trying to buy a level 3 card when he has not a level 2 card activated.



*Activate leader card:*



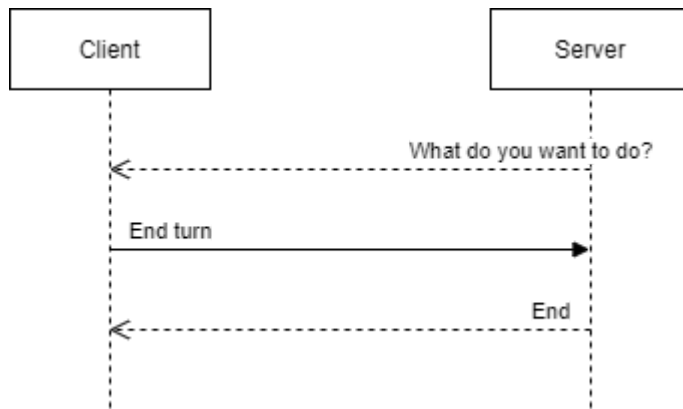
Messages:

- "Activated leader card -firstParameter": plain text with an integer ( $1 < \text{firstParameter} < 2$ ) that represents the leader card that the player wants to active.
- "Card activated": plain text sent to player when the activation of the card is done successfully.

Errors:

- "Not a number": plain text sent to player when firstParameter is not an integer.
- "Unable to activate this card": plain text sent to player when he has not enough resources to activate this card.
- "Index out of bounds": plain text sent to player when he inserts a number for firstParameter that is not in the interval  $1 < \text{firstParameter} < 2$ .

*End turn:*



Messages:

- "End turn": plain text sent by the player to the server.
- "End": plain text sent by Server to warn player that his turn is over.

110 - Ask Nickname

111 - Join Game

112 - Not the first player, wait for the game to start\*

113 - List of valid commands for the current game phase

12x/3x/4x - Messages to inform/help clients to perform their action.

15x - Messages sent from CheckCommand module

16x - Messages sent from the client to server informing about their actions

- 160 - Pre Game resources selected
- 161 - Pre Game Leader Cards selected
- 162 - View card market
- 163 - View marble market
- 164 - View personal board (in the message there is the specific personal board to view)
- 165 - end turn
- 166 - buy marble (in the message there is the specification to buy from line or column and the number of line or column)
- 167 - buy production card from card market (in the message there is the specification of card's position)
- 168 - activate leader card (in the message there is leader card's position to activate)

- 169 - activate standard production
- 170 - activate card production (in the message there is card production's number of slot)
- 171 - select nickname

18x - Game setup codes \*

193 - Discard or Transform \*

194 - Select between the two active leader cards (1 or 2) \*

195 - Depot selection - depot, extradepot o strongbox \*

196 - Resource selection \*

197 - Line selection (depot) \*

198 - Depot selection + discard \*

199 - Discard or Move \*

201 - ok

202 - Connected player - first

203 - Connected player - not first

204 - All Players connected

21x - Action performed successfully

25x - Internal success messages

310 - ACK/Correct nickname

320/323 - Setup completed, last digit identify the player id

330 - Resource chosen correctly

331 - Depot chosen correctly

350 - Ping (from server to client)

351 - Pong (from client to server) \*

401 - Incorrect Command

402 - Nothing to do here, wait for the game to start

403 - Unknown error

404 -  
405 - Action already done \*  
406 - Not a number  
407 - Index out of bounds  
408 - Missing parameter(s)  
409 - Incorrect parameter(s)  
41x - Game status error  
600 - Resource  
601 - Market Marble  
650 - Market Structure  
651 - Card Market  
652 - Personal Board (includes position, warehouse, active prod cards and strongbox)  
653 - Active Leader Cards  
654 - Leader Cards  
655 - Starting 4 leader cards  
656 - Action Token  
657 - Final leaderboard  
658 - Final SinglePlayer leaderboard (Player won)  
659 - Final SinglePlayer leaderboard (Lorenzo won)  
660- Vatican Board Parameters