

From the players' point of view :

We consider that the player who launches the game plays against two bots or two players. He has the choice of the language and controls the different possibilities that will occur in the game as we will describe afterwards in the report.

The improvements that have been added to the game are the following :

- We added an additional player so that three players can play our tCHu game. The players can now claim the two parts of a double road. Each player can claim only one of the two parts of the road.
- At the beginning, when the player launches the game, a window is displayed with an image of a train and an entry so that he can choose his gamer tag. This tag will be used during the game as his playerId.
- We added a complete menu for the player who launches the game so that he can choose the language he wants to play with at first. After the language choice, the player can either start the game or he can read the simplified game's rules. When he presses the button to read the rules, he can choose either to go back to the first menu (The choice between the rules and starting the game) or he can choose between three categories of rules.
 - 1/ The first one describes the use and the purpose of the tickets.
 - 2/ The second one describes how to draw cards.
 - 3/ The third one describes how to claim a route or a tunnel.
- We added the possibility for each player to see the points that each ticket gives. These points could be either positive if the ticket is completed by the player, or negative otherwise.
- At the end of the game, a podium is displayed on the map showing on each rank, the corresponding player's name depending on its points. For example, if the players are Mohamed, Malak and Ada. Mohamed wins the game with 107 points, Malak is the second with 102 points and Ada is the last with 87 points. Then the podium will be displayed such that at the top of the first position, Mohamed's name will be displayed and similarly for the two other players.
- At the end of the game, the longest route has a different color

The Java's implementation for each improvement :

- For the additional player,
- For the gamer tag's choice,
- For the menu, we added in the class FirstGraphicalPlayer a method for each part of the menu depending on it's language. These methods depend on the handlers that we have created in the class ActionHandlers. In the class Player, we added the methods corresponding to the player's choices that are override in the subclass RemotePlayerProxy. In the class GraphicalPlayerAdapter, we have a blocking queue for each part of the menu using the methods of the class FirstGraphicalPlayer. These methods runs the FirstGraphicalPlayer's methods on the JavaFx field. Finally, in the class BeforeGame, we adapt each menu display to the choice of the player. Enum types are created for the different choices in different languages such as Graphical constants for the rules;

- For the additionalPlayer, we adapted the majority of our classes to a new Player, we created a new RemotePlayerProxy in the class ServerMain. We adapted the serialisation and deserialisation to the third player such as the strings of the class Info, the ranking of points...
- For the first menu that gives the choice to the player of his gamer tag (or pseudo), we added a method in the class FirstGraphicalPlayer which displays the window and the entry of the characters. We also adapted the entry of the player in the class GraphicalPlayerAdapter identically to the menu of the rules and languages such that the choice of the player is his pseudo during the game.
- For the points of the tickets, we adapt the class ObservableGameState (using the method setState())such that next to each ticket, his points will be displayed.
- As for the display of the longest route in a different color at the end of the game, we use the class MapViewCreator and more specifically , its method createMapView.
- Finally, for the podium which is displayed at the end of the game, we use the class GraphicalPlayer and specifically the method showPodium which displays the podium. We also use the class Player.

Links of the resources :

Site for the train png <http://clipart-library.com/clipart/yckK8bkRi.htm>

Site for the Spain logo https://www.clipartmax.com/middle/m2H7G6N4i8b1d3N4_espa%C3%B1ol-spain-flag-circle-png/

Site for the French Logo <https://www.pngaaa.com/detail/790364>

Site for the English Logo

[https://www.vhv.rs/viewpic/i/hoTwh_uk-flag-png-transparent-uk-flag-icon-png/\\$](https://www.vhv.rs/viewpic/i/hoTwh_uk-flag-png-transparent-uk-flag-icon-png/$)

For the podium : <https://www.freepng.fr/png-zkfigy/>