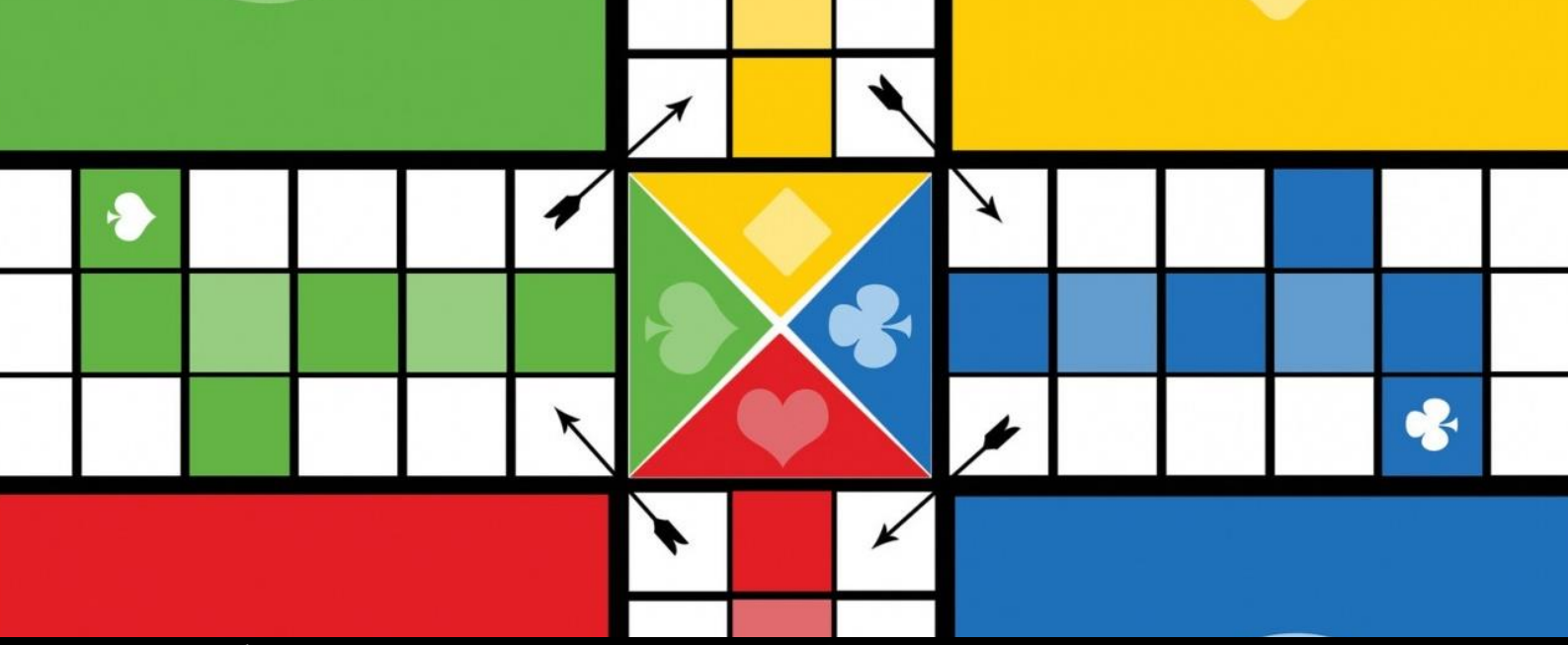

UNIVERSITÉ DE TECHNOLOGIE DE BELFORT-MONTBÉLIARD

PROJECT REPORT: Ludo Board

LP2A – P2021

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Tronc commun 4

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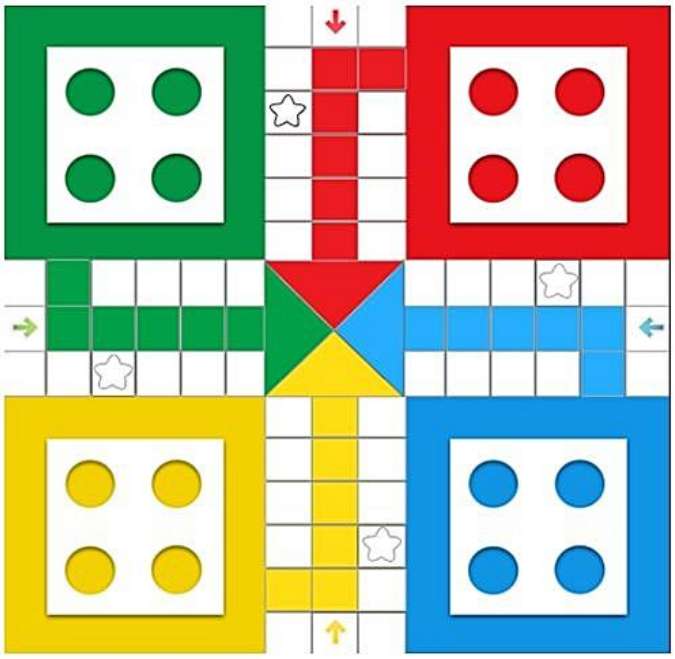
Introduction

The two members of this group for this project are Julien CONSTANT and Noé ECHARD. This project is part of the learning process of Java Language in the LP2A course at the University of Technology of Belfort-Montbéliard during the Spring semester of 2021. The objective is to manage a project in group of two and to concretize our Java programming skills. The goal of this project was to program a Ludo board game, derived from the well-known Parcheesi game with a smaller board and minor difference with rules.

As noticeable difference we can notice that we have safe zones, which prevent from returning from the starting area, but also “blocks” which prevent from moving forward enemy pawns.



The above picture shows the pattern browsed by pawns. We can see that it’s smaller than the “Little Cavalry” and has safe zones, represented by stars (in addition to the starting case, painted in the team’s color).

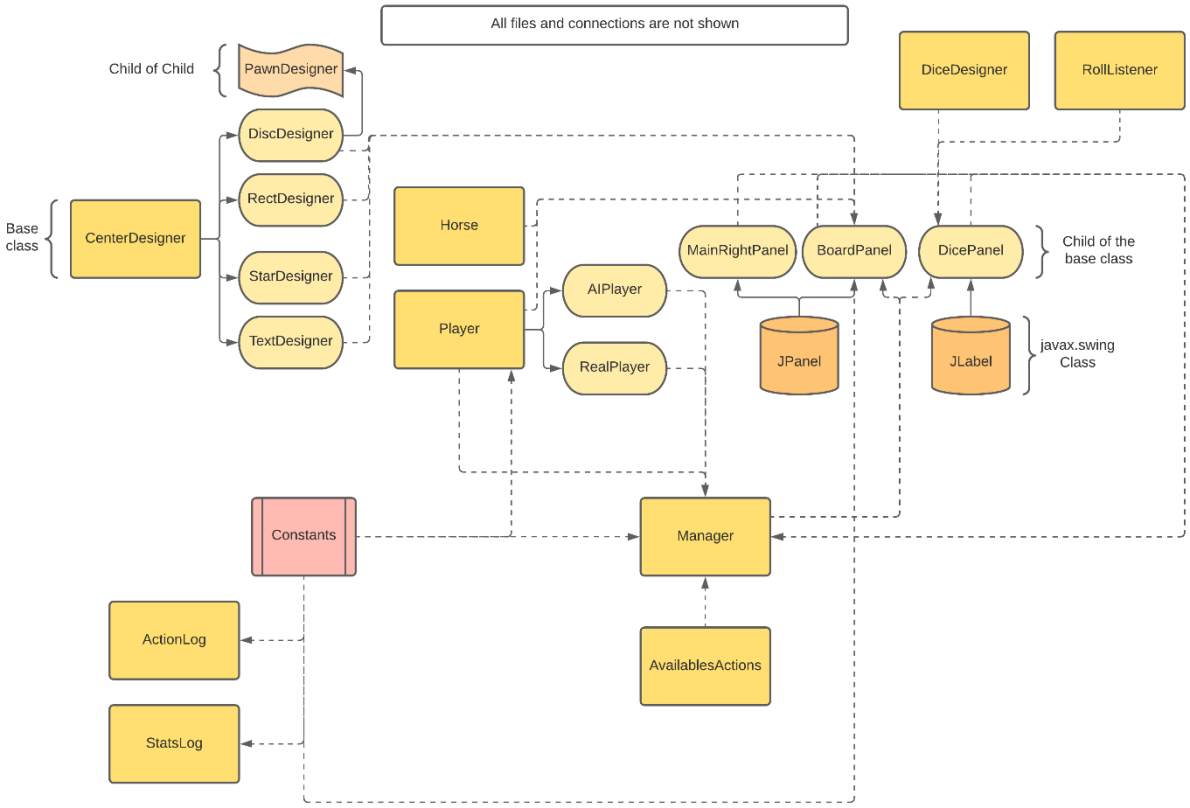
I. Conceptions choices

First of all, we chose to create several packages to correctly and comprehensively separate the various classes.

In particular, we decided to put all our constant variables in the same file to keep a project airy.

Besides, we have decided to make parent classes. In which are written the functions common to all the child classes. Then to extend this one in the child classes with additional parameters to specify them. (example: DiscDesigner extends its parent CenterDesigner)

Better yet, we created identical classes with different names, in particular with IAPlayer and RealPlayer, both of which are duplicates of Player, thus allowing when we associated them at differentiating an AI from a real player.



II. Architecture of the program

To describe the architecture of our program, we are going to describe the distribution of files in the packages. We have divided all the java files into four packages:

- The first package is named “designer” and regroups all java files related to the GUI and display of information for the game. In this package, we can find:
  - CenterDesigner: general settings about the GUI
  - DiceDesigner: designer of the dice
  - DiscDesigner: used to draw circles
  - PawnDesigner: used for drawing pawns
  - RectDesigner: used to draw rectangles
  - StarDesigner: used to draw stars in safes areas
  - TextDesigner: used to draw text

- The second package is named “game” and regroups all java files related to the game itself, like game logs or game managing. In this package we can find:
  - ActionLog: game logs management
  - AvailableActions: management of actions for the player
  - Constants: general constants used through the project
  - Manager: game manager
  - RollListener: used for the dice roll
  - StatsLogs: statistics logs management

- The third package is named “panel” and regroups all java files that organize the drawings created by the “designer” package. In this package we can find:
  - BoardPanel: Left panel used to display the game
  - DicePanel: Dice button and drawn dice
  - MainRightPanel: regroups the dice panel, statistics logs and actions logs

- Finally, the last package is named “player” and regroups all java files related to the building of player objects and AI. In this package, we can find:
  - Player: player actions and decisions management
  - Horse: pawns management
  - IAPlayer: renamed version of Player
  - RealPlayer: renamed version of Player

III. Conclusion

This project was primarily a good way to improve our Object-Oriented Programming skills. Thanks to it, we have been able to improve our capacity of working in-group, distribute the work and show what we could make.

We are proud of what we achieved insofar as it's fully functional and has a graphical user interface. From our point of view, our work is a success since it has fulfilled the objectives of the project.

In addition, we wanted to thanks Franck Gechter, Mohammed Kas for allowing us to learn the basic of Object-Oriented Programing and investing time in this LP2A course.

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