

Application Programming using Java Project Proposal

Hairong Chen, Qiran Sun, Yichen Li, Zhaolong Lin

July 31, 2020

1 Introduction

This project is an implementation of a popular Chinese card game: Doudizhu. The game features easy-to-learn rules that are hard to master, requiring mathematical and strategic thinking as well as carefully planned execution.

The game is played among three people with one pack of cards (54 count), including the two differentiated jokers. It starts with each player bidding for the "landlord" position. Those who lose the bid or do not bid enter the game as the "peasants" team competing against the landlord. For each player, the objective of the game is to be the first one to have no cards left.

The game starts with the landlord. In each round, each player must be able to show a deck of a certain pattern following that of the last player in turn, while each card must be larger than each of the last player's. A player with no available cards to show will be skipped in the round. If both 2 other players are skipped for a pattern shown by a player, the game enters another round starting with that player.

Deck patterns are shown as below:

Definition of each card's "size": $3 < 4 < 5 < 6 < 7 < 8 < 9 < 10 < J < Q < K < A < 2 < Joker$

- . Single: 1 card
- . Pair: 2 same cards
- . Trio: 3 same cards
- . Trio with single: Trio + Single
- . Trio with pair: Trio + Pair
- . Plane: 2 trios of consecutive cards
- . Bomb: 4 same cards, priority higher than any other patterns except Joker
- . Joker bomb: 2 Jokers (any combination), highest priority of all patterns

2 Members and Duties

Hairong Chen: card shuffling and choosing algorithms

Qiran Sun: function design, user interface

Yichen Li: project management, user interface implementation, documentation

Zhaolong Lin: server-client communications

3 Features

- . Online multiplayer
- . Easy-to-use user interface
- . Card suggestions during game play
- . Informative hints and help pages
- . Challenging competitions based on simple rules

4 Plan of development

First week: division of labor, setting up code repository, implementation

Second week: demonstration, debugging, submission

5 Keywords

card game, multiplayer, server-client communication