National Taiwan Normal University
CSIE Computer Programming

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Due Date: June 20, 2021

Project

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Board Game: SAN JUAN

1.1 Introduction

The following introduction is from wikipedia.

- https://en.wikipedia.org/wiki/San_Juan_(card_game)

San Juan is a card game designed by Andreas Seyfarth and published in 2004 by Alea in German and by Rio Grande Games in English. The game is derived from the board game Puerto Rico, and takes its name from San Juan, capital of Puerto Rico.

The game uses a unique deck of 110 cards and props for two to four players. The object of the game is to compile the maximum number of victory points by creating buildings and producing commodities. The players attempt to accumulate victory points by constructing buildings, each of which provides a special ability, and producing and selling goods. Players take turns by selecting one of several roles to fulfill, which triggers the specific action for that role, and gives a special advantage to the person who chose it.

The cards, each of which depict a building and describe its ability, serve multiple purposes: A card in a player's hand is, at the same time, both money used for building, and a potential building to be built. Additionally, the cards are used to represent goods produced in any Production building.

As each building provides a number of victory points, players attempt to gain the highest score before the end of the game. There is no direct player interaction; Players affect each other by selecting roles at moments less opportune for their opponents.

1.2 Rules

Please see the following links:

- https://www.fgbradleys.com/rules/rules4/San%20Juan%20-%20rules.pdf

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For simplicity, in this project, we use the rule of 1st edition.

1.3   What You Should Do

You need to design a personal game. That is, I can enjoy your game on my computer. Since this is a personal game, you need to develop some computer agents to play with the human player.

You also need to prepare a presentation about how you develop this game. For example, you need to introduce the process of your program, your structures and your functions. You also need to describe what the most difficult part is and how you solve this problem. Everyone must makes 15 minutes F2F demonstration to me and TAs. The demonstration includes building your project, presentation, game playing and FAQ.

You also need to prepare a document of your program. The document is not a playbook, but an introduction to your code.

1.4   Grading Rules

The grading rules are as follows:

- Support 1 player and 3 computer agents (Basic Function): 8 pts.

- Support computer agents with more than 1 level: 2 pts.

- Your presentation: 3 pts.

- Your document: 2 pts.

- Any other interesting features: at most 3 pts.