Hearthstone

Overview

This document describes the overall design and implementation of the game of hearthstone. The whole game is implemented in C#, and the technology that involved in the game is Object-Oriented method. The game can work on any operating system, which C# environment is provided.

Whole Design

Process of the Game

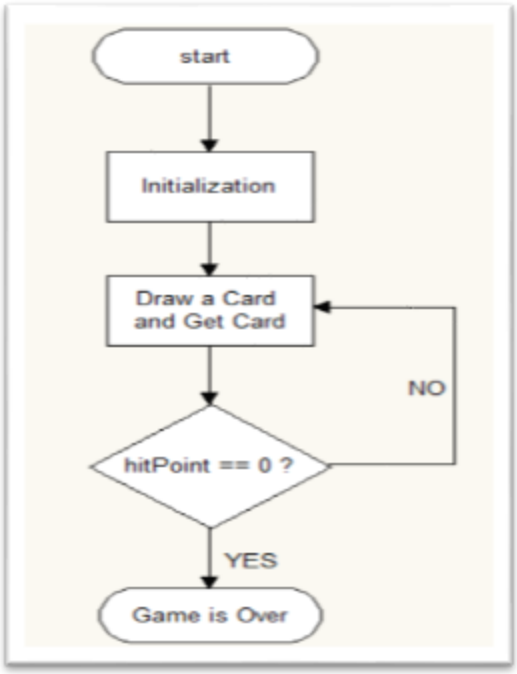

Figure 1: process for one player

Initialize two players, 30 hitPoint, 4 random cards, 0 mana crystal.
Players play in turn: First, Second.
Per turn, mana crystals regenerate, and a player is rewarded with an additional mana crystal up to a maximum of 10. If there is a card, then draw a card, if there is not, 1 hitPoint is deducted.
There is a method called useCard which will monitor every data. If all 30 cards from the player's deck have been drawn, or there is not mana crystal, a new turn will be started.
When player plays a card, if the hitPoint is 0, the game is over.

Field and Method

1. cardType: abcdefghi, as listed in the rules No 2.
2. Class of card: fields include damage, heal, manaCost, display, isDrawCard, and type which is one of the cardType.
3. Class of Deck: fields include length which is 30, myCard which is a random card, and nextPick which is the next card's index you'll get.
4. Class of Player: fields include hitPoint, inHand card, mana, manasum, myDeck which is a set of random cards, and name.

Please check the Program List for more details.

Design tradeoffs

The game is implemented in a test-driven method, Because of the time limitation, I did not focus too much on error detections, and small details for player's convenient. There is a simple command-line interface that lists all the pertinent information per turn. Although I did not provide GUI, all the rules are implemented and tested successfully.

Improvement & Extensions

The possible improvement of the game is to provide more detailed designs for players' convenient, such as an excellent GUI. Since this is an alpha version, scalability, maintainability, testability, portability are considered.