go

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# Analysis

## Identification

Go is a board game which is said to be one of the oldest board games as it was created nearly 4000 years ago in China. It is popular in china, kora and especially in japan. Japan had 4 very competitive go schools which was set up and funded by the government during the Tokugawa, which made Go a profession in Japan. It later became globally popular in other countries after World War 2. There is also a European Go federation which holds many different competitions and championships in several countries every year.

Go is a 2-player abstract strategy board game where the opponent is trying to capture territories on the board by encapsulating the territory with their pieces, also known as stones. The two plyers get assigned a colour at the start and usually the weaker opponent gets white, at a turn you can either place a stone down or pass a stone to your opponent to ‘surrender’ your go. You win by capturing the most territories on the board, where one territory is an intersection between lines on the playing board.

I will be creating an online virtual version of Go that will allow multipole users from the same network to play the game. They will be able to choose their difficulty level and get a randomly selected person at the same difficulty level to play with them. This is will be suitable to all skill levels as I will accommodate players that have no prior knowledge of go to play as well.

### 1.1.1 Why this is solvable by a computational approach

The reason this game can be approached computationally is because Go is not a very popular game and not very many people are either good at the game or plays it, so by creating it a virtual game we can expose the whole world to it and allow people of all skill levels and backgrounds to play the game and advance their skills.

The game can also span many hours at the highest skill levels, so allowing them to save and store games virtually and easily restore them can be solved using software. Players are also rated using Kyu and Dan. Where Kyu is a set of student level ranks and Dan is a set of master level rank. People would, and most probably, end up forgetting their rank and their rating number if just done using pen and paper, however if it was stored virtually on a user-friendly interface, it would allow the players to get rid of the hassle of needing to remember their rating and allow them to compare their ratings with others across the world.

Another reason that they may not have the board and pieces available to them all the time or have enough people to play with. To overcome this having a virtual version allows you to always be able to play on demand and to know there are always going to be people wanting to play with you.

## Stakeholders

### 1.2.1 End Users

My end users will educational institutions wanting to teach the game and players wanting to advance their skills within the game. For this

I will interview and talk with teachers and other people within the school to see what their expectations and wants are for a virtual Go game and see if I can reasonably reach their needs while developing the game.

Players with little or no knowledge of the game will be able to select the board size of 9x9 and play a relatively simple game to start off with as they can learn how to play the game and begin to understand the rules, they will be matched with someone at the same skill level as them so they can reasonably advance within the game.

Intermediate players with be able to choose a board size that is either 13x13 or 17x17 to be able to play a more stimulating and challenging game as they will need a more advanced level of play for them to enjoy the game.

For the most skilled players they can play with board sizes 19x19 which should satisfy their needs and allow them to play a challenging enough game for them. They will most probably play for hours so the ability to save is and save the game state is a needed requirement.

Another more general stakeholder is the casual player of Go, this is where they may not have the board and pieces available to them all the time or have enough people to play with. To overcome this having a virtual version allows you to always be able to play on demand and to know there are always going to be people wanting to play with you.

### 1.2.2 Requirements

The system will be written in python 3, so as a guide the user must have the necessary requirements to run python 3, they will also need enough disk space to store the game. The hardware requirements are that they will need a mouse to control the stones and where to place them, a screen so they can see visually what the current state of the system is, a keyboard to be able to press the enter key when required and enough hard disk space to store the Go game itself.

Here are the basic requirements to run python 3 from the python website itself

## research

Specific features of each solution

## 1.4 success criteria

# Design

## 2.1 subproblems

## 2.2 algorithms being used

## 2.3 usability

## 2.4 structure

## 2.5 testing

# Development

## Prototype 1

## Prototype 2

## 3.3 Prototype 3