Data Driven Turn-Based Game Reflection

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1 Introduction

This report intends to detail the design process that went into the data-driven turn-based game that was assigned as part of the WSOA3003A assignment. It aims to discuss the intention behind the decisions made regarding the data and game design.
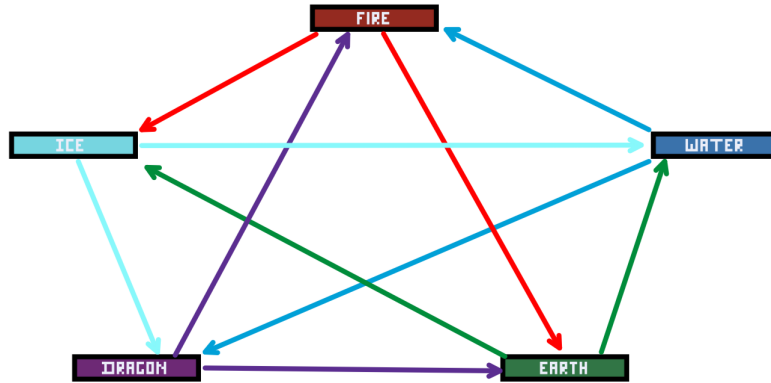

Figure 1: Secondary Type Chart

2 Game-Play Overview

The gameplay loop that is presented to the player is comprised of choosing from a hand of four cards. Each card represents a primary and secondary type. The primary type is one of three options: rock, paper or scissors. The secondary type, similarly, represents one of the five possible options: water, fire, earth, dragon or ice. The player proceeds to choose one of the four cards and the AI opponent does the same. After each player has chosen their card for the turn, one of the players is deemed to be attacking and the other player is said to be defending for that individual turn. The player that is attacking is the player that plays a card that counters the card played by the opponent. The attacking player deals a calculated amount of damage to the defending player which is reflected on the relevant player's health bar which resides next to each player's hand.

3 Design Decisions and Intention

The intention of presenting the player's turn options as cards that rotate in and out of a deck is to create a scenario where each of the participating have a limited selection of options. Since the opposite hand is hidden from the player, it forces the active player to try and keep track of which cards have been recently played in order to attempt to predict what card might be played next. Each players deck only consists of 8 cards and players have an incentive to play cards that match the player's secondary type which is indicated underneath each health bar. This gives the participating player an opportunity to learn the opposition's deck in order to maximise their chances of playing a countering card. The opposition AI is programmed to always choose a card that matches their set Secondary type if available but the player can only figure this out if they are paying attention to the choice patterns of their opponent. This creates a system that appears to be random at first but if the player is able to effectively use the limited information provided to them about their opponent, they can develop some sort of strategy regarding which cards they choose to play at different points in the game cycle.

The primary and secondary types are designed in such a way that there is never a draw between players unless both players play an identical card. The primary types use the classic system of: rock counters scissors, scissors counters paper and paper counters rock. If both players play a card with the same primary type, the secondary type is used to determine the attacking player. The secondary type chart can be seen in figure 1.

When it comes to damage calculation, each player is assigned three statistics that influence the amount of damage dealt to the defending party. These stats include attack, defence and accuracy. The base damage (i.e the minimum amount of damage) is a random number within a specific range. This range scaled by the ratio of the attacking player's attack stat to the defending player's defence stat. All extra damage calculated is a percentage of this base damage. If the attacking player's card's secondary type counters that of the opposition card, the damage increases by 50 percent of the base damage. Similarly, if the victorious secondary type matches that of the attacking player. The attack also has the potential to be a critical hit, which adds on another percentage of the original base damage. The player's accuracy stat represents the percent chance of a critical hit.

This variation in damage numbers creates a sense of unpredictability to each attacking phase of the game cycle. The player data system is similar to that of many turn-based combat games as it leaves plenty of room for variation in combat as well as presenting the player set of stats that could potentially increased by levelling in future iterations.

4 Overall Reflection

The game in its current prototype state functions as intended. The game-play loop however lacks a certain amount of depth that needs to be addressed in future iterations. Improvements to the variety of different cards may be further implemented in order to create a more complex strategic dynamic between players and perhaps reveal more information for the player to go off of. The game however does achieve the intended unpredictability with the partly random nature of the damage calculation and the lack of knowing which player will be attacking each turn.