Fantasy Auto Battlefield

A thesis’ Game Development Document



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GDD Template Written by Benjamin “HeadClot” Stanley

Special thanks to Alec Markarian

Otherwise this would not have happened

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# Overview

##### Last Unity Version used for the project: 2020.3.11f1

## Theme / Setting / Genre

The setting, in its initial concept, will be a generic epic fantasy world, containing fun and random creatures and spells, mainly drawn from the pool of available artwork (asset store)

The theme of the game will be fun and short battles, between player and AI, utilizing the cards of the player with emphasis on the positioning on the board.

The game can be included in many genres such as turn-based strategy, card game, auto-battler.

Core Gameplay Mechanics Brief

1. At least initially, the game will be a single-player, with the adversary of the human player being an A.I opponent. Both of them will be referred to as players for the rest of this document.
2. Each player has a deck of cards, chosen before the start of the game.
3. Each card has a cost and effect(s) associated with it.
4. Both players take simultaneous turns, playing their cards.
5. After that the cards’ effects take place.
6. Many cards will insert soldiers (minions) onto the battlefield. Those take their turn according to individual rules that will be made clear on their cards.
7. The ultimate goal of each player will be the destruction of the enemy’s base.
8. The aforementioned bases will be on opposing sides of a hex-based board and will be damaged when opposing minions reach them.
9. The hex-based board will be of standard size and only differ on the type of tiles it will consist of.

## Targeted platforms

The targeted platform, in the current phase of the project, will only be Microsoft Windows.

## Monetization model (Brief/Document)

As the development of this game is solely, at this time, a part of my thesis, no monetization model has been examined or is planned for development.

## Project Scope

**Time Scale:**

No estimation of the time can be given at this moment, but an approximation will be calculated on the next versions of this document.

**Team members:**

The sole member of the team will be me, under the supervision of Professor Themistokles Panayiotopoulos.

**Hardware:**

The game will be developed on my personal computer and possibly on the PCs available at the Artificial Intelligence and Virtual Reality lab of the University of Piraeus.

**Licenses:**

The Unity Game Engine will be used for the development of this project under the Unity Personal Edition license.

More licenses for programs will be added as they are used.

## Influences (Brief)

### Magic the Gathering

* Collectible Card Game
* This cornerstone and ancestor of the genre, published by Wizards of the Coast, set basic mechanics such as the mana cost of each card. It contains a plethora of cards with different effects including but not limited to placing “Creatures” or “Artifacts” into the battle, or casting “Sorcery” spells. The main gameplay consists of 1 vs. 1 duels, each player taking turns to play his/her cards and attacking the opponent until one’s “life points” reach 0.

### Hearthstone

* PC and mobile game
* Hearthstone was one of the first and is still one of the most successful digital card games. It is developed by Blizzard Entertainment and uses the fantasy World of Warcraft lore as its setting and theme. Mechanically, it contains many cards that represent either minions, spells, or weapons all within the epic fantasy element and some are even distinguished as elvish, draconic, etc., accompanied by race-specific mechanics (e.g. spells that apply only to minions of the ‘Dragon’ type).

### Hand of the Gods

* PC game
* This digital card game developed and published by Hi-Rez Studios was one of the first experiences I had of a card game placing the minions played by a player into a chess-like board. On each player’s turn, the minions accepted command to move on the board in specific ways and attack or use other abilities.

### Teamfight Tactics

* PC game
* Developed by Riot Games, this game belongs to the relatively new genre of Auto-Battlers. The main characteristic drawn from this game is that the minions owned by the player act on their own according to their position and a specific ruleset. For example, there is a class of minions called assassins which at the beginning of combat jump to the furthest enemy minion’s position and begin to attack it.

## The elevator Pitch

Fantasy Auto Battlefield is a single-player turn-based strategy card game. The player is pitted against an A.I and tries to overwhelm its base by sending minions to battle and casting spells. The autonomous, after their placement, minions can move and attack on their own, can be enhanced by friendly spells, or be destroyed by enemy spells.

The minions might be powerful dragons or silly snail-men but the player will have to pay the appropriate cost for the minions’ service .

As the player progresses through the levels, he/she will be able to unlock more powerful cards. But to do so, he/she will need to use his cards and the battlefield to his/her advantage.

## Project Description (Brief)

Fantasy Auto Battlefield will be a single-player turn-based strategy game that will heavily focus on deck building and unit placement during the battle.

Before the player begins a battle, he/she will be required to choose a set of cards with which he/she will play, i.e. his/her deck.

After that the player will select a level, which will contain an A.I opponent equipped with a specific deck. The player will face the A.I and if he/she emerges victorious, will be rewarded with points that can be used to unlock more cards for further battles.

The battle itself will consist of rounds, each divided into six phases. During these phases the player will draw cards, play them and witness the results.

The battle will conclude after one of the players' bases is overrun, in other words, when the “life points” of a player reaches 0.

## Project Description (Detailed)

The game will consist of a main menu. There the player will be able to select a level to play, review his/her collection of cards, change the game’s settings and quit the game. The player will have available a number of slots that he/she can use to save ready-to-play decks, i.e. decks that meet the requirement to enter into a level.

During the selection of level, the player will be able to choose one of his/her prepared decks and will be presented with a short description of the level. After confirmation of his/her choice the combat will begin.

At this stage, the board will have to be generated. The board will each time be of a standard size and will consist of hexagonal tiles. Despite the aforementioned, the game board will be different every time, as the hexagonal tiles will be of a random terrain type. For example, tile with a fixed position on the board, in one battle may be a forest and in another a hill. Each terrain type will have a unique gameplay effect and its purpose will be to influence the players decisions in positioning and playing of cards.

During combat both players take turns simultaneously on a phase-level. That means the human player will, for example, execute his/her Upkeep Phase while the A.I. player executes its Upkeep Phase. During all times the player will be able to review his/her cards and his/her played minions by hovering over them.

During the players’ turns the played minions will execute their moveset, in the Move and Battle Phase. Firstly, every played minion will move according to its stats and rules (e.g. a cavalry minion may be able to move 2 hexagons ahead) and then the minions that meet will battle each other.

When a minion reaches the opposite side of the battlefield, one life point will be deducted from the opposing player.

The battle will conclude when one player’s life points reaches 0.

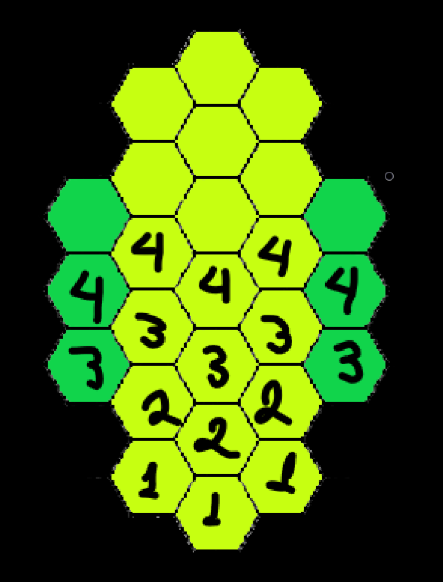
# What sets this project apart?

It combines mechanics from different card games leading to a unique player experience, involving much strategic thought about placement and resource management.

## Core Gameplay Mechanics (Detailed)

### Board Structure

~~The board will consist of hexagonal tiles with the following structure:~~

~~~~

~~Figure 1 - Abstract representation of the board~~

~~The light green lanes will connect the players’ bases and are the most important.~~

~~The dark green lanes will be secondary lanes, containing objectives with bonus for the players (e.g. bonus mana per round).~~

~~Each individual tile will have a terrain type with a unique effect. The effects will be explained in a later chapter.~~

The board will have 5 hexagons width and 8 hexagons depth.

Each hex will have a terrain type, with each type having a different effect on the units occupying the tile.

### Terrain Types

The battle map will consist of hexagonal tiles. Each tile will have a unique terrain type with its own effect.

**Grassland:** No effect.

**Forest:** Better Defense.

**Hills:** Bonus attack when attacking a unit occupying another type of terrain.

**Desert:** Units occupying a desert take damage at the end of the turn.

**Lake:** Units occupying a lake heal at the end of the turn.

*Note: Changes to the above or new effects may be available through cards.*

### Playing Cards

Each player will have a deck of cards that he/she will choose before the start of a battle. These cards will be drawn from the deck each round and will be played by consuming mana (the main player resource).

The effects of the cards will be various but some examples are “Unit” cards (minions/soldiers/creatures), “Spell” cards (“Fireball”, “Divine Heal”), “Tactics” Cards (“Supply Line”, “Dwarven Steel”) and “Building” cards(“Fort”).

Each card after being played will be discarded.

Each turn the player draws one card from his deck. If he is unable to draw due to the deck being empty, the discarded pile is shuffled into the deck and then the player draws one card.

The decks will consist of a fixed number of cards.

### 

### Units

Units are the creatures, soldiers and other beings the player will throw on the battlefield against the enemy forces. Each unit will have the following stats:

1. **Hitpoints:** The amount of damage the unit can sustain before dying
2. **Attack:** The value that will be compared to the enemy’s defense
3. **Defense:** The value that will be compared to the enemy’s attack
4. **Attack Pattern:** The pattern of hexagons the unit attacks during combat
5. **Special Abilities:** Unique abilities and effects possessed by the unit

### Unit Placement

When a player wants to place a unit in the battlefield he will need to adhere to the rules of the frontline (see below). The player will always be able to place a unit on his/her base tiles, as opponent’s units are unable to move onto them.

### Frontline

Each player has his/her own frontline. If the player has no units on the board his/her frontline consists automatically of the hexes numbered (1) – *figure 1.*

As the player’s units advance on the battlefield, so does the frontline. For example, if a player has a unit on a tile numbered (3), he/she can place new units on the tiles numbered (3) or less.

*Note: For the AI reverse the figure*

The frontline can be extended only until the hexes numbered (3). That means that if a player has a unit on a tile numbered (4) he/she will be able to place units only on tiles numbered (3) or less.

### 

### Mana

The resource that the players will use to play their cards is called Mana. Each player will be able to store up to 10 mana. On the beginning of each turn the players will gain an amount of mana equal to the number of turns that have been played with a max of 10.

*Note: There may be a balancing need to remove unspent mana on the end of a turn in future versions.*

### 

### Turn Structure

Each turn will be divided in 5 phases.

**Upkeep Phase:** The players draw cards from their deck and gain mana. Effects that take place at the beginning of each turn are activated now. The initiative is changed (see next chapter).

**Standard Phase:** The players decide which cards they will play. For each card they play, the cost is paid, the card effect takes place, and the card moves to the discard pile.

**Move Phase:** The units will execute their auto-moves.

**Battle Phase:** The units will attack any, and all possible targets.

**Clean-Up Phase:** Effects that take place at the end of each turn are activated now.

### 

### Initiative

One player will be considered to have the initiative. The initiative will be considered when the need to arbitrate order arises (e.g. units of both players need to auto-move in the same hexagon).

The initiative token will change hands each turn during the Upkeep Phase.

### Unit Behavior (Movement and Attack)

Every unit will act each turn as follows:

During the **Move Phase** the units will move 1 hex ahead in their lane. The order the units will move will be as follows:

* The units of the player that has the initiative move first
* The units that have the greater distance from their base will move first
* No units may pass through friendly or enemy
* No units may enter the enemy’s base tiles

After all the units have moved, we proceed to the **Battle Phase**, that will be described in the next paragraph.

### Unit Combat

During the **Battle Phase**, all units attack simultaneously all available targets. Each unit will compare its attack value with the defense of its targets. The attacker will deal a minimum hitpoints damage to each target plus the attack-defense differential of the units.

For every unit that its hitpoints reach 0, the unit will be removed from the board.

The units have a pattern that they are able attack to. For example, a unit may be able to attack the hexes directly in front of it and behind it. Another unit may be able to attack the three frontal hexes.

When a unit reaches the enemy base, it will deal 1 damage each turn to the base, if it has no unit opponents.

### Victory Conditions

The battle ends when a castle reaches 0 hit points.

### Deck Building

This chapter will be written in a future version of this document.

# Story and Gameplay

## Story (Brief)

No story is planned in the current version of this document.

## Story (Detailed)

No story is planned in the current version of this document.

## Gameplay (Brief)

1. The player will choose a deck.
2. The player will choose an available level.
3. The map is created, and the battle begins.
4. Each player draws an opening hand and gains mana.
5. The players decide on which card(s) to play. They will be able to see information on the cards they are holding in order to make their choices. They have no knowledge of the cards in their opponent’s hand.
6. After playing the card(s) they want, the players’ units will move.
7. After movement, the units attack available targets.
8. Now units, attack the player bases, if they can.
9. Each time a base is damaged, there is a check for battle end.
10. If no base has reached 0 life points, we return to the step 5.
11. After a winner is declared, the battle ends. If the player is victorious, he is rewarded with resources to unlock new cards.

## Gameplay (Detailed)

### Before Battle

The player will be able to access an interface to construct his deck from the available cards. After constructing a playable deck (complying with the necessary requirements e.g. cards number), the player will be able to choose from a list of levels.

### Level Description (UNDER REVIEW)

Each level will have an A.I. opponent, equipped with a specific deck.

### During Battle

The player will be able to move the camera to watch the board. He will constantly be presented with his hand of cards. The player will be able to right-click cards in order for more information to appear. To play a card the player will need to click it and then click again to confirm. If the card requires target(s) the player will now choose them. He will be able to cancel the playing of the card with a right click.

At the beginning of the turn the player will draw a card from the deck and gain mana. The player will then play as many cards as he/she want and his/her mana permit. The cards are being played during the **Standard Phase.** After player A plays a card, player B may play a card or pass, then Player A again can play a card. To determine which player plays first there will be an **Initiative Token,** that at the end of the turn will be given to the other player.

After the **Standard Phase** has ended, the units on the board will Auto-Move and Auto-Battle as described in the relevant chapter of **Game Mechanics**.

When a player’s base reaches 0 hit points, the battle ends and if the human player was victorious his is awarded resources to unlock new cards.

# Assets Needed

## - 2D

* Pass Button
* Phase Indicator
* Initiative Token
* Holding Cards
* Images for each card and placed unit

## - 3D

* Hexagon Tiles for each terrain type.
* Unit Holder (will represent units on the board)
* Visual Effects (e.g. particles for spells)

## - Sound

* Music
* Maybe sound effects or unit quips

## - Code

* Data container for the cards
* Scripts for the cards’ effects and abilities
* Battle Manager for the turn process (which player plays a card next, when then units move, etc.)
* Scripts for the behavior of the units’ such as attacking and moving
* Scripts for the behavior of the A.I.

## - Animation

* For the drawing and playing of cards
* Animation for the units’ movement
* Animation for the units’ attack
* Animation for the units’ placement

# Schedule

At this point a schedule is not yet feasible. This section will be updated in a future version.