Digi Anatomy: Game Description

Introduction

Digi Anatomy is a game based on an older version, Digital Medic developed by the previous batch of Digital Learning Interns. The target audiences are LKCMedicine Year 1 students that have just started learning Anatomy, to the more senior medical students.

Digi Anatomy is gamified by adding new elements that feature **choices** and **randomness** which add replayability and engage the medical students via various best practices of game development as well as learning design consideration. We randomised the game map generation so the players can choose what route they take, randomised the questions taken from the question pool and also added relics and other User Interface (UI) elements that will fulfill its purpose of a Serious Game. We also added features such as Filter Menu to allow topic selections that will accommodate the medical students at different learning stages of anatomy.

By having these elements we aim to have the players coming back to the game for more active learning through gamified learning contents.

Software Engine

DigiAnatomy is currently running on a game engine called Unity and since it is a web-based game, it uses WebGL as its renderer. It is written in the C# language and is automatically converted to JavaScript when exported as a Web Game.

Currently we are using the free version of the software to create this game, it contains the Unity splash screen as the game starts.

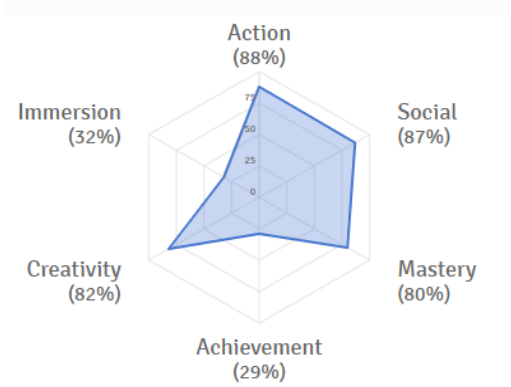
Best Practices Used for Game Development

Two things are kept in mind while developing this game: Player Motivation Profile and Type of Gamers.

Player Motivation Profile

The Player Motivation Profile combines social science and data science to understand the psychology of gaming. For Digi Anatomy we decided that we want to target players with the top two values, **Social** and **Mastery**.

To the right, is an example of a Player Motivation Profile that plays Digi Anatomy. This chart



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comes from a site called [1] Quantic Foundry and it follows their [2] Gamer Motivation Model

Social

This value addresses players who are competitive in games and like to play with friends. Despite not having a leaderboard we do have a scoring system which players can use to compete with one another for the higher score. By having these competitive elements, we can expect players who enjoy playing games with friends to be attracted to this game.

Mastery

This value addresses players who play games to master them. This is similar to **Social** where we target players who are competitive except that the players can either want to master the game to be better than other gamers and/or aim to get a higher score to beat their own previous score. These types of players would normally keep playing the game to get better.

Type of Gamers

There are 3 types of gamers, casual, mid-core and hard-core. The groups that we are targeting are casual to mid-core gamers, this group consists of all the types of gamers. As for why we are not targeting the Hardcore Gamers, it is because we do not have a competitive scene for it.

Game Elements

Digi Anatomy Roguelike game mode combines several game mechanics in order to gamify the standard quiz.

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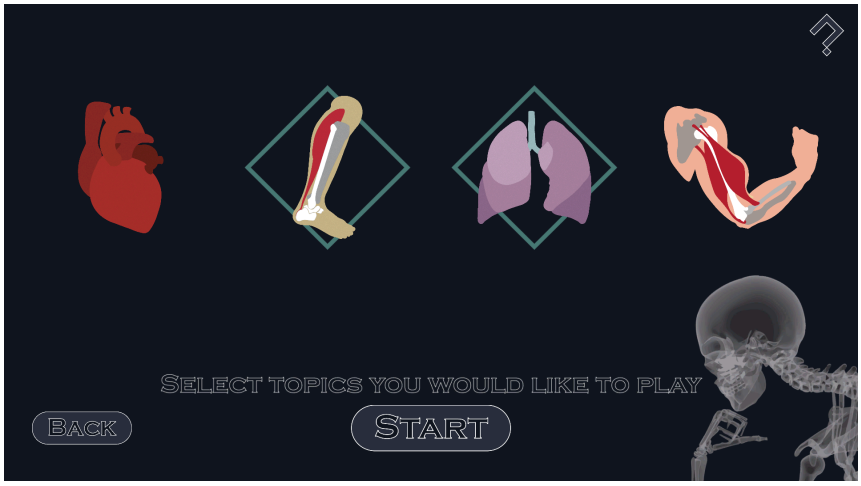
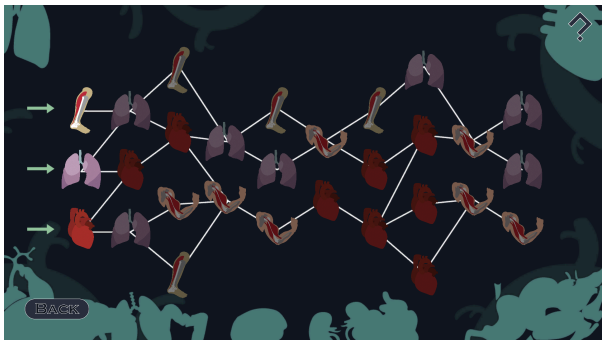
Filter Menu

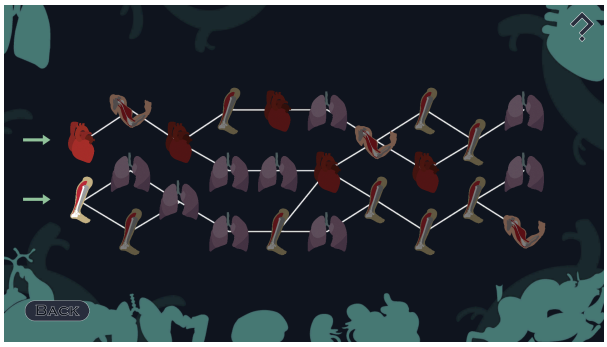


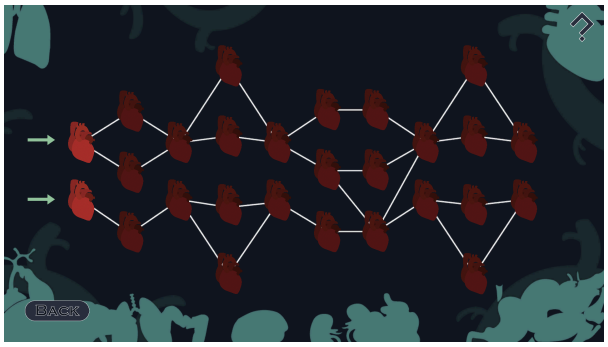
We added a new feature where players can choose topics that appear within the game. This is to accommodate both students who had just started learning anatomy and the more senior students. By doing this, students can select topics that they have learned or want to learn and will not run into the frustration of receiving a question that they cannot answer.

This filter also influences relics that can appear within the game as relics that do not interact with chosen topics will not appear.

Map







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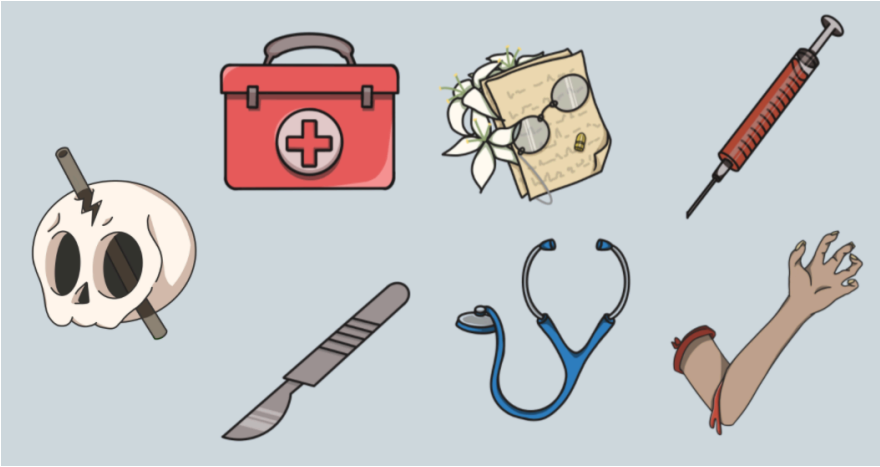
One of the key features we added is the rogue-like map. Gamers can use this map to see how stages are connected and plan ahead in order to complete their gameplay, whether it is easier to score by selecting topics they know well or selecting topics that give them the most points in combination with their relics. As of 25th May 2021, 5 unique maps are created and will be randomised for replayability.

Within each map, the players must play through each selected path of topic/stage and must answer 4 questions correctly in order to progress to the next topic/stage. When a question is answered wrongly, they will lose 10 seconds from the remaining time left from each stage. And they lose the game when the time runs out.

To further motivate players to learn and answer all the questions correctly, you will only receive a relic as a bonus upon getting all 4 questions correct without any errors. This targets Mastery for players that are good at the game will be rewarded with a higher score.a

Relics



Relics are permanently activated items that give a bonus, usually in the form of a score multiplier, which lasts throughout that playthrough. Introducing relics serves to push players to choose routes that they normally may not choose, helps with mastery of the game by making players learn the relic effects, and discovery of the different relics and their trivia for each of the relics.

Relics can also target a subset of gamers who play games as collectors. These gamers will keep on playing the game with different categories in order to get all the relics.

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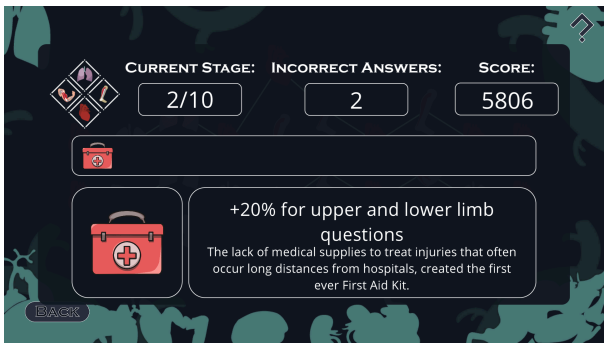
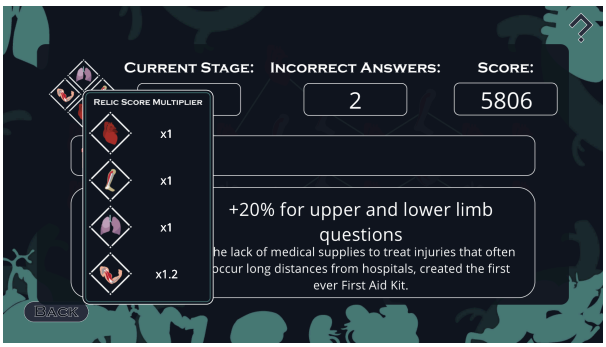
Tab Menu





As a way to simplify and present game mechanics in a readable form, we added a panel that pops up as long as the player holds down the “Tab” key on their keyboard. This panel is only available on the map to prevent distractions or exploitation.

The tab menu displays currently held relics, where they can see a larger icon, effect and trivia. Hovering over the top left corner, displays topics that exist within the map and their respective score multipliers so that players do not need to manually count all the relic multipliers.

Additionally, it also shows the player their current stage number out of ten, incorrect answers and score. This is to compile most information that the player should know into a single panel for easier tracking.

Overall

We added choices within the game in order to allow the player to feel in control of their score outcome and make decisions that matter. Implementing roguelike genre elements gave them the element of choice on what questions they will answer with the new map, what bonuses they will get based on the relics and in turn the game also influences their decisions with what options it provides.

References

- [1]: Gamer Motivation Profile Tool: https://apps.quanticfoundry.com/#
- [2]: The Motivation Model: https://quanticfoundry.com/#motivation-model