GALAXY QUEST

GAME ANALYSIS

Figure 1: Galaxy Quest

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1.INTRODUCTION.

"Galaxy Quest" is a thrilling and ambitious game with an engaging experience planned for release on web and mobile platforms. The primary goal is to develop a flexible and engaging world, allowing players to experience a range of adventures, including solo missions against AI enemies or multiplayer challenges. The "Galaxy Quest" game will utilize a significant amount of web hosting bandwidth to guarantee seamless and uninterrupted online gaming, ensuring all players have an enjoyable and consistent experience. In order to, accomplish this, we will utilize a MySQL database for the storage and administration of user information, including game advancement. Having a database provides users with security by ensuring preservation and accessibility, enabling users to resume from where they stopped.

Gamers will be assuming the identities of space adventurers from two different groups: the 1st United Earth Federation and the Nova Pirates. Nonetheless, unauthorized guests are limited to the Nova Pirate Faction. When stepping into their roles, players are given a unique feature for each faction: special ships, photon torpedoes, and plasma cannons.

After selecting a faction, players can choose the game level difficulty: Easy, Medium, Hard. On the flip side, unique vessels will be positioned at particular points in a 3D grid to form an accessible area. Players will alternate steering their ships to search for opponents, plunder them, or participate in tactical battles. After discovering the enemy, the player can pick which weapons to use from their collection. The player will possess a unique skill that can be used during combat, with a greater energy consumption.

The weapons in the game have a certain finite amount of energy, which will be depleted with each use. To reload weapons, registered users can use the resources they have accumulated in missions. On the other hand, the ships are equipped with a protection system (protective shield) that absorbs damage for 5 consecutive turns, the shields will regenerate to their maximum capacity, with this what we do is that defensive tactics are used to improve the capacity fleet defense. The game continues until the user's fleet is destroyed, although if you have the Nova Pirates faction you will never retreat. At the end of the game, the leaderboard updates to show the best players. Winners receive points added to the user's profile, which can be used or redeemed for upgrades and resources for future games.

Finally, "Galaxy Quest" offers an epic adventure, combining combat strategy and defense.

2.SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

2.1 FUNCTIONAL REQUIREMENTS

-Users can log in using Login (email and password).

-Unregistered users can access the game without registration.

-Password recovery for registrants.

-Registered users can choose between two factions (The United Earth Federation or the Nova Pirates).

-Unregistered users can only choose the faction (The Nova Pirates).

-Players can choose between solo missions against the AI or multiplayer matches.

-Level of play: Easy, Medium, Hard.

-The game mode is turn-based.

-Each player can move, attack, or explore.

-Players can choose the ships and weapons for each combat.

-Weapons have limited energy that is expended with each use either in attack or defense.

-Ships have a shield that absorbs damage until it is exhausted.

-After 5 turns, if the ship does not take damage, the shields regenerate completely.

-Winners earn points that are redeemable for upgrades or resources for future games.

-Global and faction classification.

-Players receive real-time notifications when their ship takes damage.

2.2 NON-FUNCTIONAL REQUIREMENTS

-Easy to use, accessible and responsive interface for any type of device.

-99.9% availability to minimize downtime.

-Available for web and mobile platforms (IOS, Android).

-Support for multiplayer games.

-The game should take less than 5 seconds for solo matches.

-The game must have 50ms latency maximum.

-User data must be stored securely and in compliance with data protection regulations. (Backups)

-Encrypted passwords and protected communications using https.

--Have compatible and updated browsers (Chrome, Safari, Firefox, Edge...)

2.3 SYSTEM REQUIREMENTS

-Server with good bandwidth capable of supporting multiplayer functionality.

-MySQL database to manage users, game progress, resources...

-Adequate architecture to support Web API Services to manage the logic of the "Galaxy Quest".

-Web client.

-Use of web technologies (Html5, css5, JavaScript) with frameworks such as Vue.js or React.

-To render the 3D environment, use Blender.

-Compatibility with IOS, Android using frameworks like (React Native)

-Requirements for mobile (IOS) must have at least IOS 12+ and above and Android version 8.0 and above.
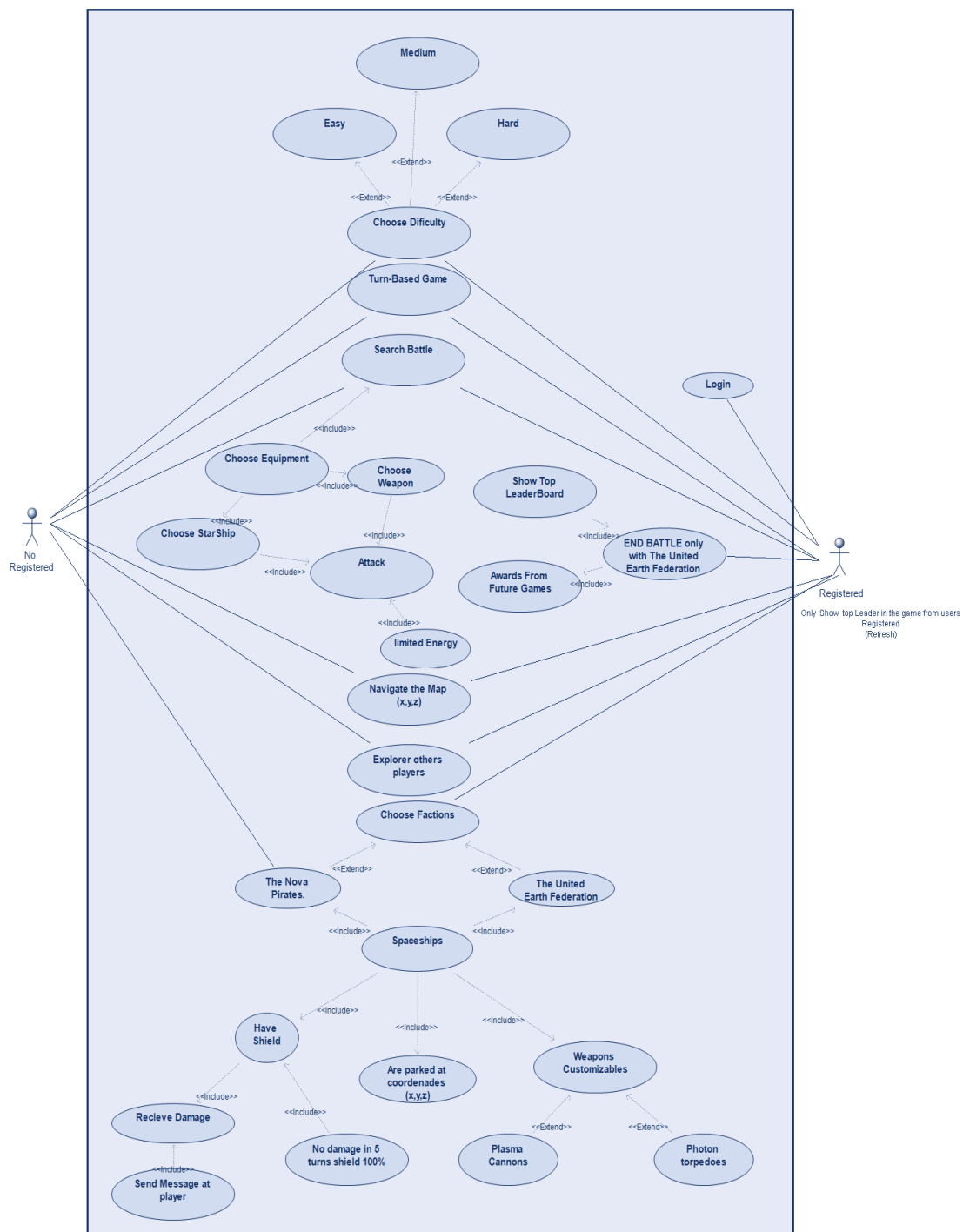
3. USE CASE DIAGRAM

Figure 2: Galaxy Quest Use Case Diagram

4. ACTIVITY DIAGRAMS
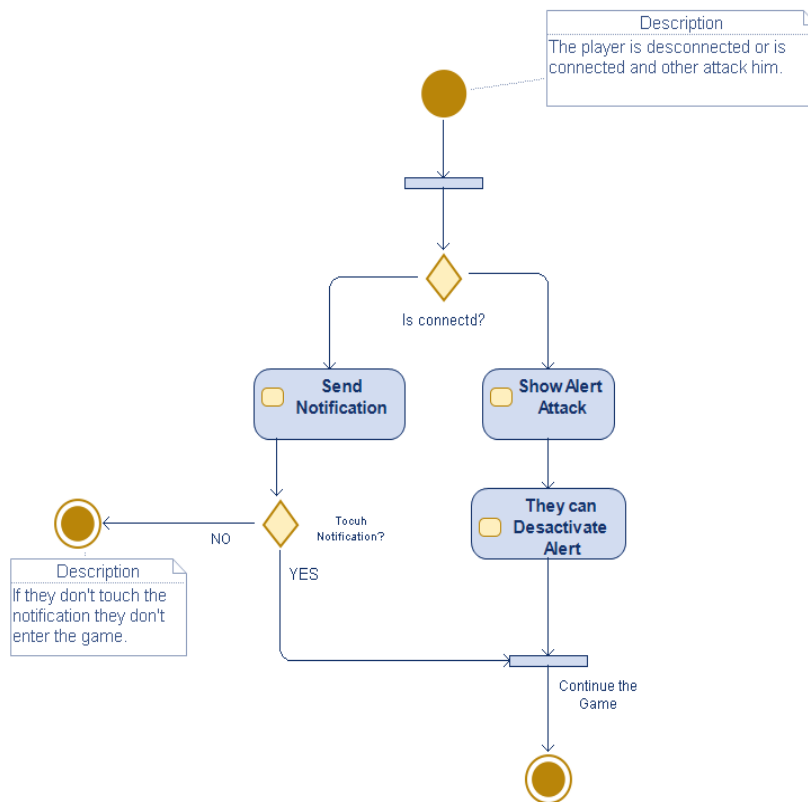
4.1 ACTIVITY DIAGRAM: ATTACK MESSAGE

Figure 3: Activity Diagram Attack Message
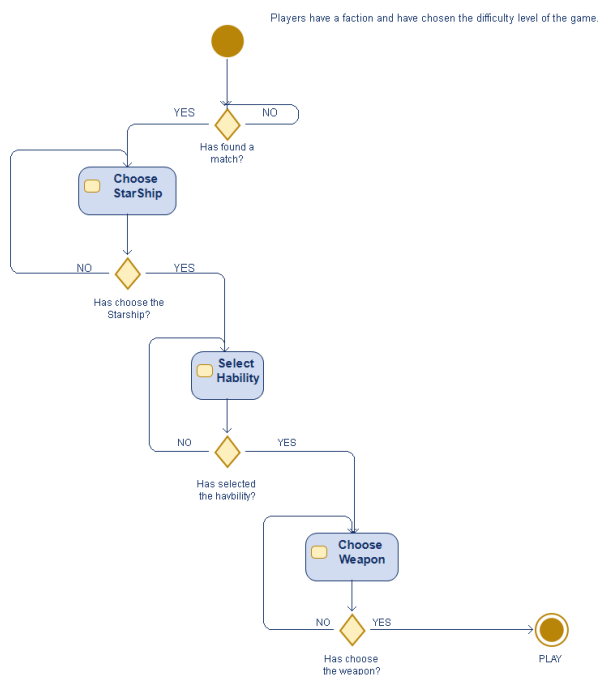
4.2 ACTIVITY DIAGRAM: CHOOSE STARSHIP & WEAPON

Figure 4: Activity Diagram Choose Starship & Weapon.

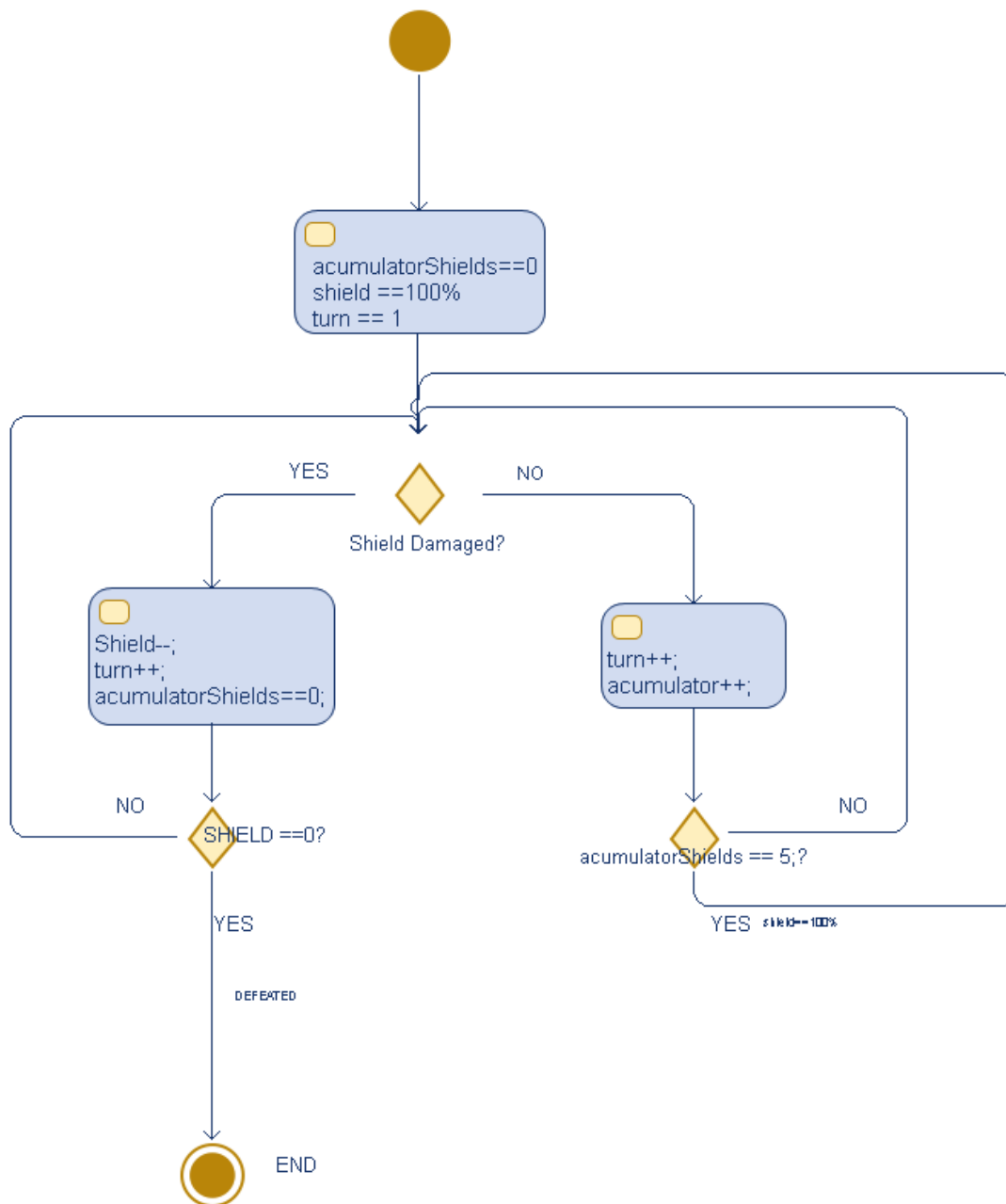## 4.3 ACTIVITY DIAGRAM (EXTRA): SHIELD STARSHIP

Figure 5: Activity Diagram Shield Starship

5. CONCLUSION

In this practice I have learned how to develop a game suitable for any smartphone and website that should be used for each of them and the minimum requirements it has to create it, under the legal conditions. It has also helped me interpret the 3D model rendering, which I didn't know which one to use. However, practice helps you a lot, but it leaves many things unexplained, such as, for example: you want it suitable for smartphones and web, but you don't specify for which versions you want to implement it (if it is for IOS until which versions after the current one you wanted it since we are currently going for IOS 18 and for the case of web for which browsers : Opera, Microsoft Edge, Chrome, Mozilla...), but I still found it entertaining and I learned many new things that I didn't know.

6. WEBGRAPHY

This Compulsory Exercise is available on GitHub, I create a repository call it "Galaxy Quest". This is the link (https://github.com/JoseMm13/GalaxyQuest)

I use this link on 22 of October 2024, for help me understand with program I can use render 3D environment. Link: (https://all3dp.com/en/1/render-programa-renderizado-3d/).

I use copilot (AI) for create the first figure on 17 of October 2024. For design the front page.