

Lunar Landers Project Requirements Summary

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The product use cases are mostly related to joining and playing matches. This usually involves the players (end user) joining a queue and competing with each other. Once the correct amount of players are gathered, a game is created. The players then compete in the game and the victor is determined. The players statistics are then stored in the system, and the players are free to quit or compete in another match.

The Functional Requirements for this project mostly relate to the creation of matches, the queuing of players, and the determination of victors. The maps generated for each match must be distinct and must be enjoyable to play on separate matches. The maps generated for multiple matches will be manually evaluated to ensure variety in map types. The player queue is the mechanism in which matches are made and players are placed into matches, this system must be able to properly place 8 players in each match. This system must be able to endure strain from a great amount of players queuing at once, and allow for party play. The winner and scoring calculations must be able to analyze a player's performance and assign a score, and determine a victor. This system must be able to function in any possible match, and needs to be tested against all possible scoreable actions.

The Data requirements for this product primarily relate to the storage of player statistics and login information. The system must be able to store statistics about each player, in order to inform the player on their performance, and to give feedback to the developers. These statistics must be confirmed to be accurate on each match before it can be accepted.

The Performance Requirements ensure that the game functions accurately and precisely during normal gameplay. The game must allow for tolerable speed and latency, ensuring that a player's input and the corresponding action occur in quick enough succession to effectively control the lander and react to opponent input. In addition the input and behavior of the game must be precise, especially regarding collisions. The collisions between players and objects (or other players) must be precise and consistent in order to allow for fair, balanced and enjoyable gameplay. The game must have the capacity to keep track of each player's ship, and all obstacles on the map in order to effectively react to each player's input. This must be done with minimal strain on both the server side host and the client's machine.

Dependability Requirements for this product address the requirements for reliability, availability, robustness and safety. The system must not fail frequently, in order to accommodate a large and continuous player base. Similarly the game must be available from a variety of locations, due to the requirement of mobile platform inclusion. This will be tested from a variety of locations to ensure similar gameplay in a variety of settings. The system must also provide a safe environment regardless of age or demographic. This will be ensured by a robust censorship system, which will only allow friendly and non-offensive communication during gameplay.

Maintainability Requirements for this product mostly relate to Supportability, Adaptability, Scalability and Longevity requirements. The maintenance requirements ensure that the system is frequently maintained by developers, and any scheduled downtime is reported to users. In addition users should be able receive support by giving feedback to the developers. This may also be done automatically through the examination of player statistics. The game must play similarly on different platforms, to ensure a fair experience for all players regardless of platform. The game must also be able to scale to accommodate a great amount of players, it must also be able to scale with new features in

order to keep players engaged. This must be done without exerting excessive strain on the user's hardware. The game must also be designed to last for at least ten years, in order to sustain a player base for a respectable game lifetime.

The Security Requirements for this program ensure the protection of user data. The user's data should only be available to the user themselves, in order to ensure safe usage. The integrity of server side storage must also be protected, in order to preserve the integrity in the face of overload attacks. The storage of any very sensitive information, such as private information like payment information, must be protected. Overall the system must be secure from any hackers or inside malicious agents. To ensure this we will have an outside security consultant verify the integrity of our systems before deployment.

The Usability and Humanity Requirements ensure that users have an easy time picking up the game, and have no trouble navigating the user interface or picking up the controls. The game should be easy to pick up and play, since one of the main selling points of the game is its simplicity. The user experience should be simple to match this. While the controls are simple the game must also have a brief tutorial and control reference page, for players who need it. We also would like the gameplay to be quick to pick up, in order to reduce the learning curve on the players. The users should also have a degree of customization allowed for them, mostly regarding things like language and disability settings.

The Look and Feel Requirements will also ensure that the players have a simple and enjoyable user experience. The appearance of this game must appeal to gamers with vibrant colors, but also be accessible to colorblind people. In addition the game must appear to be very polished and welcoming, the users must understand that this is a high quality game, and the mood should be playful and lighthearted.

The Operational and Environmental Requirements will ensure the players have no trouble installing the game in a variety of environments. Especially since mobile platforms will be supported, the user must be able to use the application from anywhere that accommodates an internet connection. The game must also interface with the app store or storefront from which the game was bought, in order to support login and in app purchases. These app stores will also be responsible for the distribution and delivering the game to customers, ensuring that every player can successfully install the game. Updates and releases for the game must also be supported by these platforms, and players must update the game before play.

The Cultural and Political requirements will ensure that the game is accessible to anyone who desires to play it. This will be done by making a conscious effort to not offend or exclude any group of people. This will be accepted only if the game is able to pass through a diverse focus group without any issue.

The game must also pass through any legal requirements placed upon it. The game will comply with any government regulations placed upon it by any place it is available in. In addition all standards will be respected, especially age ratings.

All of the above requirements have robust acceptance tests. These will be done upon release, and upon each update to ensure that the game still meets all of the requirements it must meet to be acceptable to the clients and developers.