Score 93/100 **Limit the summary to 2 pages only.**

Pac-Rats: Development Project Summary 2

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Product Use Cases/Functional requirements:

There are five key functional requirements that must be fulfilled in order for the game to function at its most basic level. Firstly, the game must handle account creation. Account creation would allow a new user to create an account and have that account be saved so that they can log in at another time. Secondly, the game must handle account sign in. This means that a user who has already created an account will be able to access their account and all of the saved data associated with said account. Thirdly, a user, once they have signed up and have logged in, must be able to join a game with their specific gameplay preferences. Fourth, the and perhaps most important, the gameplay loop itself must be functional so that users can play the game with each other. Finally, once a game has been completed, the site should be able to update all information accordingly and have those changes reflected in other aspects of the site. Our product use cases model these fundamental requirements and provide an outline of how the ways the user could go about testing these requirements.

Performance Requirements:

In order to provide proper transaction time between the server and the users the system must limit lad between stimulus. A fast response must be provided. A good UI improves user experience and involvement in the game. We do not want the user to confront horrible UI experiences. The login process to retrieve user information for example should not take more than 300 milliseconds. In addition to speed, transfer of data must also be precise/accurate. Handing out misinformation may result in bugs or crashes in our system. Since our game requires all players to interact with each other in real time the transfer of data must be accurate. The largest thing. As the player base grows, the system must also expand to a larger capacity. The system must be able to support many user connections at the same time. This is a multiplayer game and we do not want unresponsive avatars during a game match. Our system can host many matches, but typically a match can hold upward of 10 player connections concurrently.

Dependability/Maintainability and Supportability Requirements:

The game needs to be maintained and monitored so that the system will not suffer from a fault leading to a possible erroneous state or failure of the system. The system will be maintained by administrators and at least one Sysadmin so that reliable operation can be upheld. Having a team of dedicated admins helps alleviate other stakeholders that need to maintain the site. Our particular product might include a possible team of at least 5 administrators and one system administrator. In addition the system must provide ongoing customer support. This may include unprocessed in game payments, lost user id, etc. This system must be able to provide for the user

a “frequently asked question (FAQ)” section and a “Question and Answer (QnA)” section so they can write an inquiry to the support team. The team will be able to read and answer customer questions. We want to ensure reliable customer service and be able to gain trust of the customers. Our team will always be available 24 hours a day on weekdays. We want to ensure that everyone is allowed to access these services and not let different time zones be a factor. Since this game is primarily a web based game, the system must be able to run on devices that support browsing (i.e chrome, microsoft edge, firefox, safari). In addition, the game will continue to run as long there are customers playing and supporting the game. Enough revenue needs to be generated to support the team of developers, admins, support, etc.

Security/Operational and Environmental Requirements:

Our product main goal is to build a strong connection of trustworthiness with our users -- both P2W and F2P. Since our product will contain pay to win (P2W) accounts the system must be able to store user information safely and and be able to safely handle monetary transactions. Furthermore, to increase security, our game must split access to the database between routes which have write access and those that don’t. This will enable us to minimize the possibility of an SQL injection attack or similar security vulnerability. In regards to the operational/environmental requirements, Pac-Rats will maintain its philosophy of accessibility by not requiring any users to have access to a specific environment/hardware and instead be designed from the ground up to support as many environments and devices as possible.

Usability/Stylistic requirements:

Our game is designed in a way such that the user is easily able to pick up and learn without previous experiences. This can be met through an easy navigable user interface and tutorial. All the symbols and icons in the game are easily distinguishable and predictable. To further improve our system we will be conducting customer surveys to evaluate the ease of using our product and improve it where necessary. Since our product is aimed to include everyone and to make it easy to use we will have to support personalization such as game controls, compatibility with screen readers and contain color blind friendly schemes colors. By having these main customizations we will be able to include a wider range of customers. Moreover the game should be family friendly since it is a browser game many kids will be able to access the game and all profanity should be censored. In order to maintain a friendly environment there will be trained moderators which will use their tools to ensure the environment is kept. Friendliness and acceptances should be portrayed in the game over professionalism. This will be accomplished by having a colorful scheme in the UI and the avoidance of avoidance of technical language so it's easier to understand.

Cultural/Legal requirements:

In order to keep Pac-Rats accessible to as many users as possible, attention will be given to cultural and legal concerns surrounding the game. Specifically, Pac-Rats will ensure that it

follows any necessary laws regarding privacy and user information. Additionally, Pac-Rats will employ various testing techniques in order to consult a wide range of cultural backgrounds so that symbols are relatively universal and able to be understood by a wide audience.

Requirements Acceptance Tests:

The requirement tests will primarily be broken into 5 tests (with possible sub category additions as necessary). These tests regard account creation/maintenance, the gameplay loop, data persistence, the user experience, and accessibility. Account creation and maintenance will provide a thorough set of tests regarding account creation, authentication, and maintenance. The gameplay loop test will be the broadest of tests, encompassing everything regarding gameplay. This includes choosing gameplay preferences, joining a game, playing a game, and how the results of the game are handled. The third test regards data integrity. This test pertains primarily to database management, however, it also describes how sessions are to be stored and how cookies are to be handled. The fourth test is quite broad and describes testing the user experience of the game. “User experience” in regards to this test is a board term to describe various things like how well the GUI guides new players, the perception the game’s branding gives off, and the time it takes for a new user to get into a game. The final test regards accessibility. Since a large focus of the game has always been on accessibility, testing for it has been given its own category. Accessibility will be tested by how well the game accommodates a wide variety of users. This includes users with motor disabilities, color blindness, financial constraints, hardware constraints, and so on.