| Requirement | Description | Rationale | Priority |
|---|---|---|---|
| The ability to import photos from user | App will be able to receive imported png and jpg images | Gives users the option to "customise" the game with their own images | Low |
| Ability to crop imported photos | Auto-crop images to squares | Need a way to size imported images correctly otherwise the game will not look good. | High |
| Storing user data | Store user data in a json/csv file such as the user's name and score | Need a way to gather the names from players so we can use it in other parts | High |
| Calculate score during game | All names will be counted as unique and given their own primary key, name will be given by the user after clicking "play" | It is essential for the user to keep track of the scoreboard while playing the game and having a unique name to save the individual score. | High |
| The ability to reset puzzle | Gives user ability to swap the puzzle out for another if they don't like the one they're given | It's a basic ability that lets the player have some control over the game's RNG | Medium |
| Working leaderboard | Top 20 leaderboard where out of the highest scores each name be given 1 spot in the leaderboard marking their highest score | It's not a must but it incentivises players to replay the game to get a better score | Medium |
| Working countdown | Timer that counts down and it finishes when it hits 0 | So players will be limited by time they have to complete the game. This makes it possible to lose the game | Medium |
| Varying countdown modes | Difficulty modes will use incremented counters from 10 minutes down to 1 minute | Adds more of a challenge as player will have less time to finish the game | Low |
| Working 4x4 puzzle mode | Default puzzle mode | Need at least one puzzle mode for the game to function | High |
| Working 5x5 puzzle mode | Additional puzzle mode | It's a harder game mode than 4x4 for smarter players | Medium |
| Working 6x6 puzzle mode | Additional puzzle mode | It's a harder game mode than 5x5 for even smarter players | Medium |
| User stats | Menu option to see top score, games played, games completed and best time associated with name given | Users often like to see their game data | Medium |
| Dark mode | An option to switch the colour of the menu/GUI to a darker one that's more eye-friendly is given to the user | If we expect the user to play the game for any prolonged period of time | Low |
| Picture splicing | Picture is effectively split into appropriate amount of pieces for each puzzle size | This is a fundemental part of the game | High |
| Puzzle sliding | Puzzle pieces slide smoothly and snap to place | This is a fundemental part of the game | High |
| End screen | Displays a completion screen upon finishing each puzzle their score (and time completed for timed puzzles) | An end screen allows users to see their score (and time completed in) | High |
| Uploaded image cropping | Ability to crop the user-uploaded images into sliding puzzles in a 1 to 1 ratio | Uploaded images may not be 1 to 1 which wouldn't fit into the puzzles format | Low |
| Background music | Music playing while a user is solving the sliding puzzle | Makes the game more relaxing while the user is playing the game | Low |
| Reward system | The user will receive reward(s) upon completing a puzzle (new themed images, new leaderboard banner ext) | Entices the user to play the game more | Low |
| Leaderboard Banners | User can unlock cosmetic banners for their name in the leaderboard after completing various challenges | Encourages repeat gameplay and a sense of prestiege over other players | Low |
| Story Mode | Ability to play through a predetermined campaign | Engages the player more, gives a 3 dimernsional feel to completing the puzzles | Very Low |
| Microtransactions | We can have a shop with icons,leaderboard banner skins and mouse skins | Entices the user to play more because they have invested into the game | Very Low |

| Help tab | Help tab to show user basics about the game such as controls, common issues and how to fix them | Allows beginners of the game to grasp the basics of the game and how to interact with the UI system for various tasks like importing photos which may not be as intuitive | High |
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| Requirement | Description | Rationale | Priority | Test plan |
|---|---|---|---|---|
| Speed | Speed determines how fast an application responds to commands | It needs to load and reload the puzzle fast | Medium | Application should respond to user input in under 5 seconds. This means from the time the user has entered the input, to the time the application has completed its animations, the total time should be less than 5 seconds. |
| Usability | The ability to use the app like navigation and quality of performance | We should make it so that the transition from the menu to the game and back be seamless | High | All widgets within the application should be tested to ensure they are responded and performing the action they are intended to perform. |
| Error minimisation | Error minimisation determines how well the application responds to unexpected actions by the user. E.g a user tries to exit a game without first saving their progress | The system should try to prevent any crashes from happening internally, and should have checks in place that will stop the user from being able to crash the program. | High | The system should prevent any crashes to happen while the game is working. The application should be tested in everyplace to stop the crash to happen in the application. |
| Compatibility | It refers to the minimum hardware requirements and suported operating systems | It's a small app it should work on the majority of systems | High | As we are working on flutter, the app should be able to be ported to any OS. |
| Clear User Interface | Clear user interface to increase user understandability to effectively control game commands | The user interface should be clear so that the user quickly and understands the controls of the game. | Medium | In order to test how simple our user interface is, we would have to host another focus group in order to evaluate it against our design. |
| Serviceability | The ability of app to give service and assistance | If the user need any kind of support while using the app. | Medium | The Application will have help tab. This means if the user need any basic help the tab will consists of  FAQ in it. |
| Maintainability/Manageability | How much time does it take to fix and how easily can an administrator manage the system | There should be no problems but even if they appear they would be easy to solve | Medium |  The application will have a FAQ document included with it that will include common problems and fixes. The system will be manageable from a system administrator point-of-view. Furthermore, any complex problems, the user can email for support. |
| Data integrity | No sensitive data will be held by the game, only usernames and gamedata (scores and times) the same as you'd find in a local arcade but with the added bonus of seeing the gamedata of any name inputted as none of that data is sensitive | This allows the user to skip the login process and get right to the game, as well as encourage fun unique usernames amongst competitive players | High | The application will not ask the user for sensitive or personally identifiable information when launched. It has also not been programmed to store sensitive data, however this can be verified by checking the game's storage files if it does contain any personal information. |
| Capacity | Game should be able to hold 100 base images for puzzles as well as 20 slots for user pictures per device and as much statistical data as can be held in an adjacent text file | Gives enough data for basic interaction and customization of the game on their given device | Medium | The application should be able to provide 100 stock images for users to choose from. The images should be selectable from the application start-up and each image should be correctly loaded and divided in appropriate puzzle segments once selected. |