**Software Developer's Guide**

**Tools**

**Programming Languages Used:**

* GDScript: Godot is the chosen game engine.

**Integrated Development Environments (IDEs) Used:**

* Godot Editor: For development in the Godot game engine.

**Libraries:**

* No libraries used.

**Third-party Software Used:**

* Photoshop: For art.

**Configuration:**

* Godot: Set project configuration to "2D" for arcade-style gameplay, adjust resolution to 1152x648.

**Testing Scaffolding**

* Manually Tested.

**References**

1. **Requirements Document:** Details the educational and engagement goals of the game.
2. **Design Document:** Outlines game mechanics, visuals, audio, and UI design principles.
3. <https://psyche.asu.edu/>
4. <https://science.nasa.gov/solar-system/planets/>
5. <https://science.nasa.gov/solar-system/galileos-observations-of-the-moon-jupiter-venus-and-the-sun/>
6. <https://science.nasa.gov/solar-system/temperatures-across-our-solar-system/>

**Installation Guide**

1. **Prerequisites:**
   * Install the game engine Godot.
2. **Installation Steps:**
   * Clone the project repository from GitHub.
   * Open the project in Godot.
   * Configure the project settings as outlined in the configuration section.
   * Run the game within the engine or export it as an executable file for distribution.
3. **Operational Environment:**
   * Windows 10 or later, MacOS 12 or later.
   * Minimum hardware: 4GB RAM, dual-core processor, and 500MB free storage space.

**User Guide**

1. **Features:**
   * Trivia Section: Answer space-related questions and learn about the Psyche mission.
   * Arcade Mini-game: Use arrow keys to navigate a spaceship and land the shuttle.
2. **Instructions:**
   * Launch the game.
   * Select "Start" from the main menu.
   * Follow the tutorial to understand the controls and objectives.
   * Use arrow keys to move and avoid obstacles in the arcade mini-game.
   * Answer trivia questions using the on-screen prompts.
3. **Workflows:**
   * Complete trivia and lander-game to progress.
   * Continue playing to improve your score.
4. **Maintenance:**
   * Periodically check for updates to the game repository.
   * Report bugs or issues through the project’s GitHub page.

**Version Description Document**

1. **Version/Release Number:** v1.0 (December 2024)
2. **Installation Instructions:** Follow the installation guide above.
3. **Completed Stories:**
   * Trivia game functionality implemented.
   * Arcade mini-game mechanics and levels designed.
4. **Contributors:**
   * Colin Bowser
   * Joseph Linton
   * Joseph Gregory
   * George Wieland
   * Jason Rao
5. **Test Cases Ran to Verify Stories:**
   * Trivia logic tested for randomization and accuracy.
   * Obstacle collision and movement mechanics validated.
   * User experience tested for intuitive gameplay.
6. **Possible Known Errors:**
   * Rare trivia question repeats during extended play.
   * Slight delay in level transitions.
   * Terrain occasionally does not cover the entire screen width.
7. **Future Features:**
   * Expand the trivia question bank.
   * Add Music.
   * Add Sound Effects.
   * Add more hints.
   * Ending to the game (possible restart?).
   * Ability to go back to the start screen.