Requirements

# Purpose

* Educational video game aimed for children
* Provide educational environment that is engaging for children
* Aids learning with different learning styles

# Features

* Player can move around left and right and jump
* Player answers questions to move forward
* Player collects items to progress further
* Menu System
  + Save Progress
  + Adjust Display
* Overworld to connect levels, and show current progress

# Functional Requirements

1. Level Accessible and Functioning
   * Description: All levels must be fully accessible to intended areas and prohibit access to areas not intended by design. Questions presented in levels should be answerable with the correct answer and display properly on the screen. All the content will display properly in the bounds of the screen.
   * Fit Criterion: Player cannot with reasonable attempt leave boundaries, able to complete the level and gain access to all intended areas. Every level should yield the same results with testing.
2. Save and load Progress
   * Description: Player progress must be able to be saved at reasonable intervals. Once data is saved after game is closed, player should be able to restore progress upon reloading the game, and selecting the appropriate menu items.
   * Fit Criterion: Player saves progress through game interface. Player score, progress through level to include, questions answered, items collected, is saved to a file. Player closes game, then reopens it. When player loads the game, all data saved will return to the game. Inside level data is loaded if the level was not complete. In the overworld menu, all scores on previous levels as well as collectables will also be loaded.
3. Player Profiles (Stretch Goal)
   * Description: Player profiles in Menu system. Player creates new profile or selects theirs form list. The profile will hold all their data which they can save and load.
   * Fit Criterion: New Profile is created and added to list. When game is closed profile will remain. Profile is selected from list.
   * Dependencies: Requirement 2- Save and Load Progress. All saved data and progress associated with respective profile will behave as required by above requirement.
4. Menu Display and Function

* Description: The main menu should be accessible during the start of the game and during pause. The menu will allow players to edit settings and start the game.
  + Fit Criterion: All items on menu do as it says. They display properly and all buttons work when pressed. Players are able to load the correct level that the menu indicates.

1. Dialog System Display
   * Description: Must properly appear when character enters in range of an object or obstacle. Questions will go away when answered.
   * Fit Criterion: Questions will be answered with the correct answer then disappear opening the way forward. Wrong answers do not answer the question. All text is legible and appears on screens on all levels.
2. Overworld to link levels
   * Description: Over World will link levels and spiders’ home. Show items collected. When enough items collected next level is unlocked.
   * Fit Criterion: Levels must properly transition when they are selected. Criteria is met to unlock level, and provide proper access.

# Performance Requirements

1. Program Stability
   * Description: Game does not crash or freeze and has good performance on most common devices
   * Fit Criterion: No crashing or freezing at any point of gameplay, to be tested across various performance machines.
2. Resolution Uniformity
   * Description: Game elements properly fit on various resolutions and screen sizes.
   * Fit Criterion: Levels, Menus, and all UI uniformly displays in intended position across all screen sizes and resolutions. More content may be displayed on larger resolutions, but content will be scaled, and still appear clear and text and other UI is legible.
   * Dependencies: All above requirements involving display still hold across various resolutions and screen sizes.
3. Cross Platform Compatibility
   * Description: Game runs on standard devices Windows 8 and up, and Android OS.
   * Fit Criterion: Game functions basically the same on all intended platforms. All Display appears uniformly on each target platform. No other Functional requirement is not met on any of the platforms.
   * Dependencies: All performance and functional requirements regarding display should be met on other platforms.

# Usability and Humanity Requirements

1. Conducive to learning
   * Description: The environment provided by the game and the delivery of the educational content will aid in learning for the players. Focus is not on the value of the content, but how the game as a whole is able to deliver the content in an educational manner.
   * Fit Criterion: Gameplay does not distract from the content, players are able to stay focused on the task and access the educational content. Players need to feel significant reward for playing.
2. Ease of user for target audience
   * Description: Children need to be able to understand how to play. Gameplay cannot be so complex and cumbersome that a child would not be able to understand easily.
   * Fit Criterion: While playing there should be minimal interaction with children to explain how the game works. It should be intuitive and straightforward, players are able to move towards the goal and not get lost or confused.
3. Content Interchangeability
   * Description: All questions and other puzzles should be easily changed by a third party to provide educational content.
   * Fit Criterion: Questions that are in text file load properly and display where desired. Other content can easily be changed without any compiling the binary files.
4. Editor for Levels (Stretch Goal):

* Description: A easy to use editor for third party to create content for educators.
  + Fit Criterion: Editor is able to edit levels and content. Runs as executable requiring no recompiling binaries.

1. Description: Localization Capability
   * Description: Have the ability to swap out the questions and game dialog with a different language to be extensible in the future.
   * Fit Criterion: Text files can be swapped out. It not need be a different language but all text provided to game should be interchangeable.
   * Dependencies: Requirement 11: Content Interchangeability.