To run the project

In order to run the project, simply unzip the submission package and open the unzipped folder in unity. Then, make sure you are in the main menu scene (you should be by default) and press play at the top of the screen.

Characteristics

There are 5 key objects that run the game: GameBoard, which holds the hint management script; ScoreManager, which holds the score management script; GoalManager, holding the goal management script; and EndGameManager, holding the end game management script.

The hint management script is the code in charge of suggesting a possible move after a certain amount of time.

Score management is in charge of updating the score while playing, increasing the score bar as well as fetching the number of stars the player got at the end of the level.

GoalManager is the script that deals with updating the goals required to win the level, have 5 instances of matches for blue gems for example.

The EndGameManager is in charge of the losing conditions. Thus, this script updates the time remaining at every frame unless the game is in pause. It also deals with decreasing the move count and launching the end game panels if a win or a loss is detected.

There are two other important scripts: the Candy script which is in charge of the swipe to swap functionality and the Board script which deals with just about everything else including the cascading, verifying deadlocks, and the refilling algorithms.

Lastly, all of the above scripts are contained within 1 level scene. Levels are differentiated by a Level scriptable object which contains all the parameters that vary between levels such as the level id, the different score goals (that are used to determine the number of stars), the background music and the background images. These level scriptable objects are then pooled in a world scriptable object which is accessed when selecting a level from the main menu.  
  
  
Extra features

As mentioned when describing the project above, a number of extra features were implemented. Here is a list that highlights these bonus features:

* Different background music depending on which “scene” you are in. Each level and the main menu have their own music.
* Different background images depending on which “scene” you are in. Each level and the main menu have their own background images.
* Match animation. When a match is made, all the candies in the match are greyed to show which candies are matching.
* Score bar. As the player matches candy, they gain points which increase the score. As the score increases, the score bar progressively fills up until being filled once the score exceeds the amount required to get 3 stars.
* Gem swapping. In order to move gems around, the player can directly swipe in the direction they want to swap the pieces around. This is done using trigonometry to get the general direction the user swipes and then swap the pieces in that direction.
* Hint generation. If the player doesn’t make an attempt to swap pieces (either a valid or invalid move) within three seconds, the game will suggest a piece that can be moved in order to create a match.
* Hint particle. The hint that is created in the hint generation algorithm has its own custom particle used to show the selected moveable piece. This custom particle is a ring that starts small and progressively expands until it is 1.5 times the size of a gem.
* Phone app. The game was ported to iPhone as a mobile app using Xcode.