Environment Setup

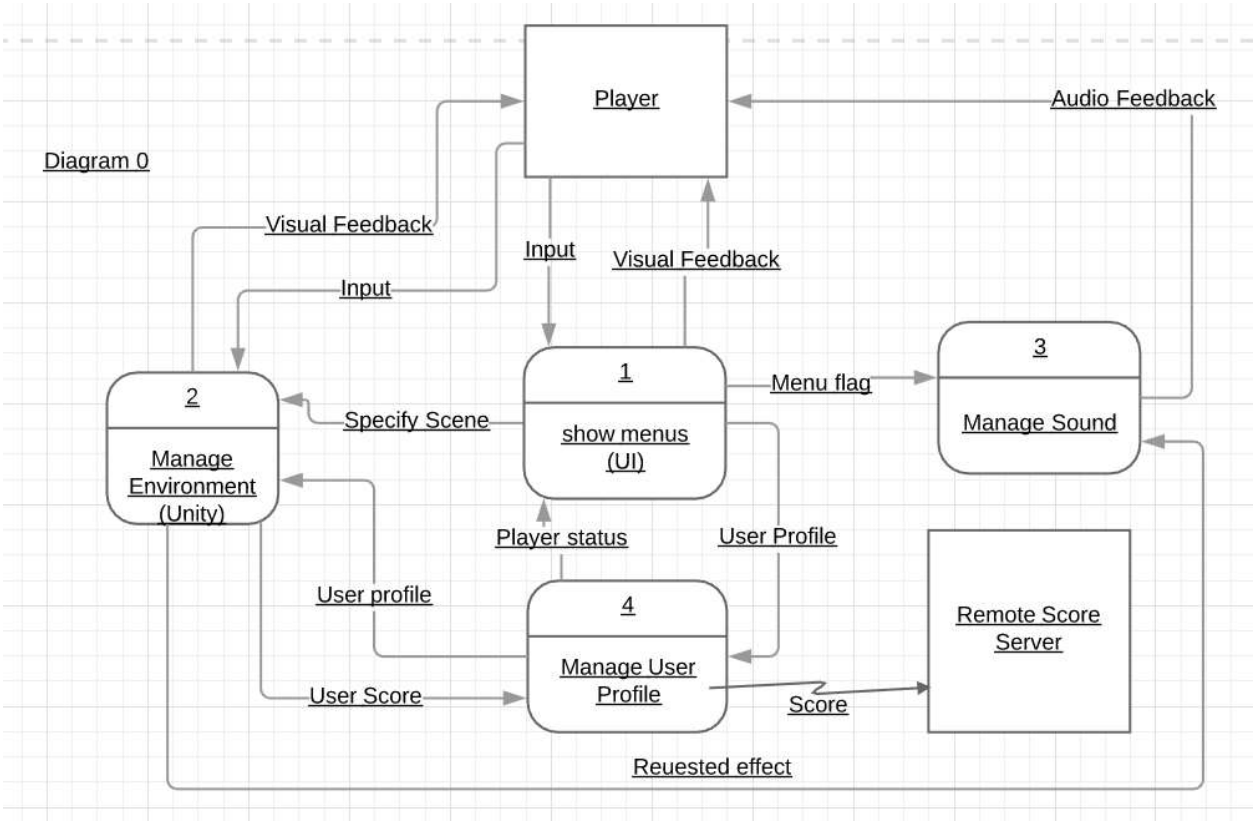
Sad Pancake has been developed using the Unity Game Engine. The specific version is 2017.3.0f3

Unity can be downloaded at the following URL:

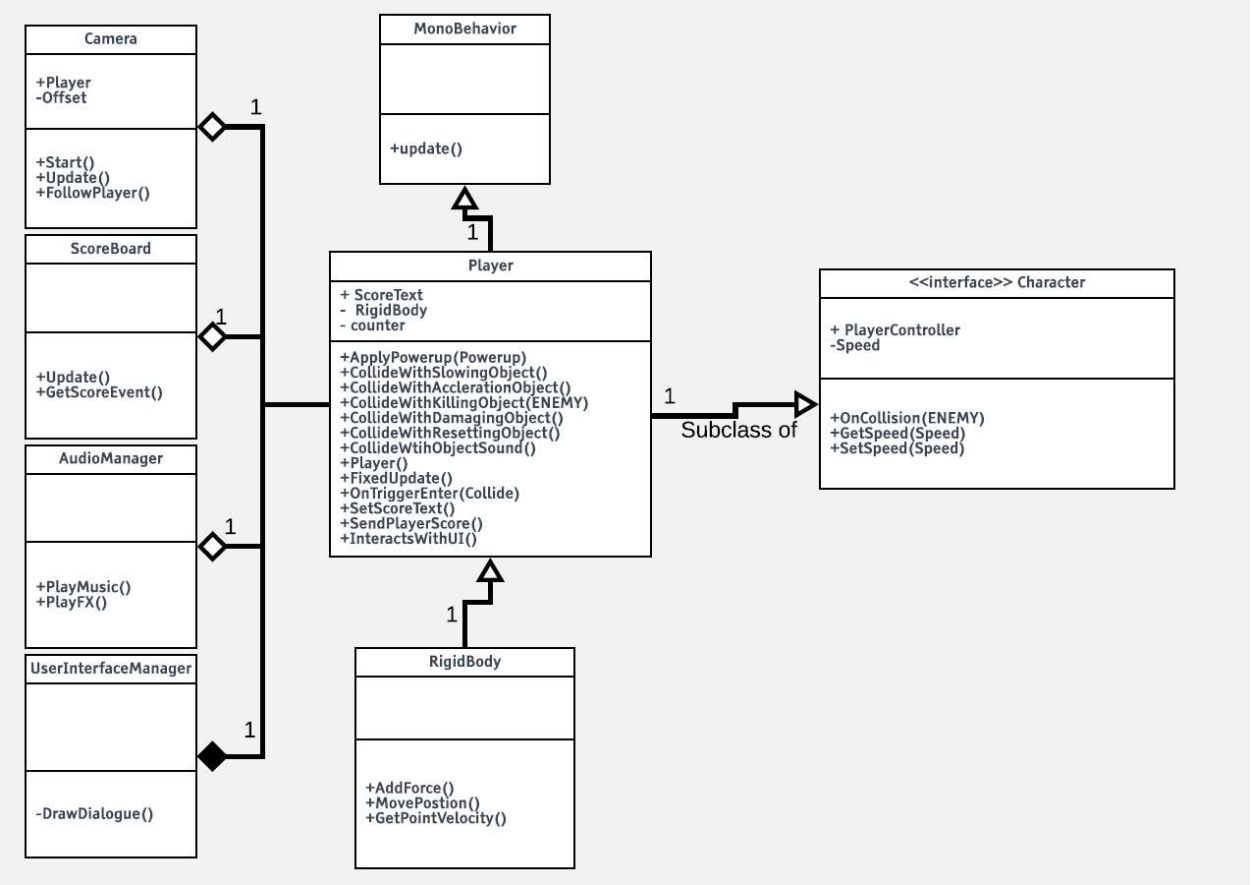
https://unity3d.com/get-unity/download/archive

That link leads the unity archives where you can navigate to 2017.3.0 and download whichever version (PC/Mac) you need. When you select your OS, you have a dropdown menu will appear. Selecting “Unity Installer” will download the proper file. Running the installer with default settings will leave you with everything you need to interact with our program.

Code Overview

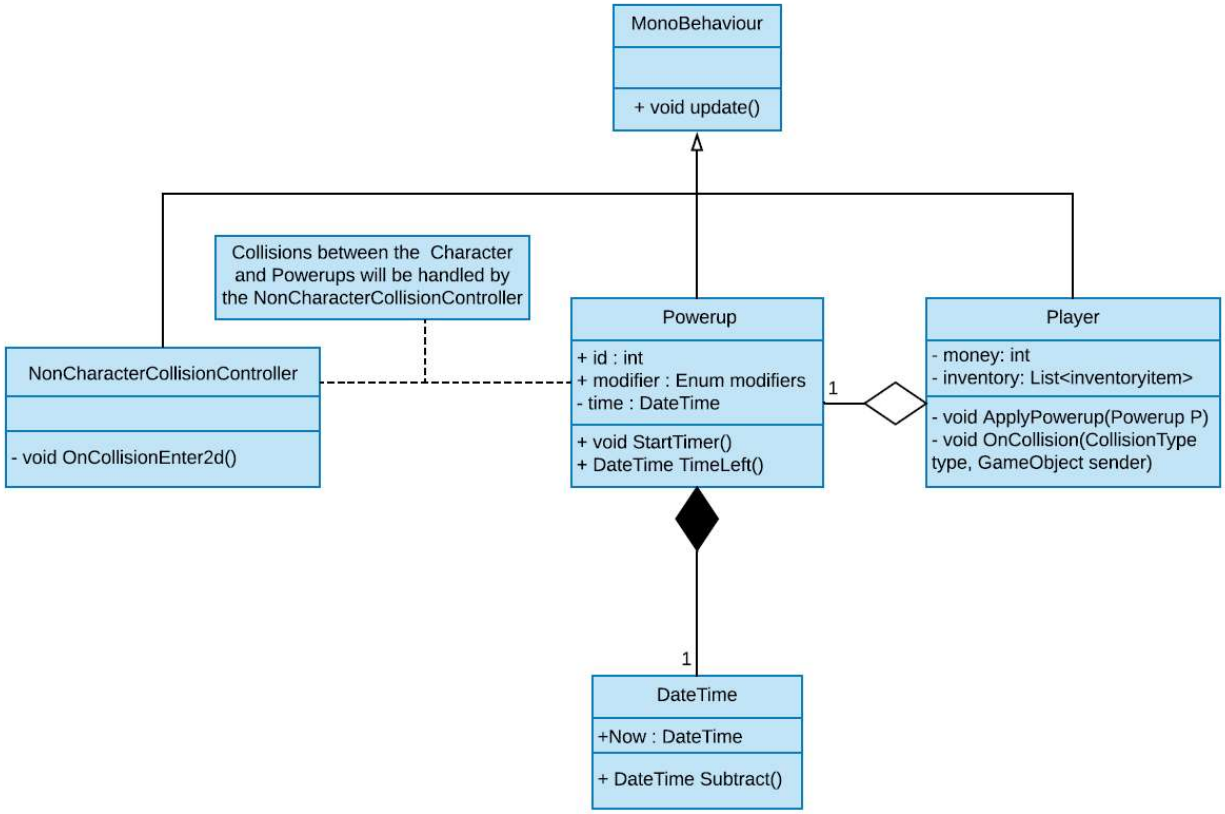


Player



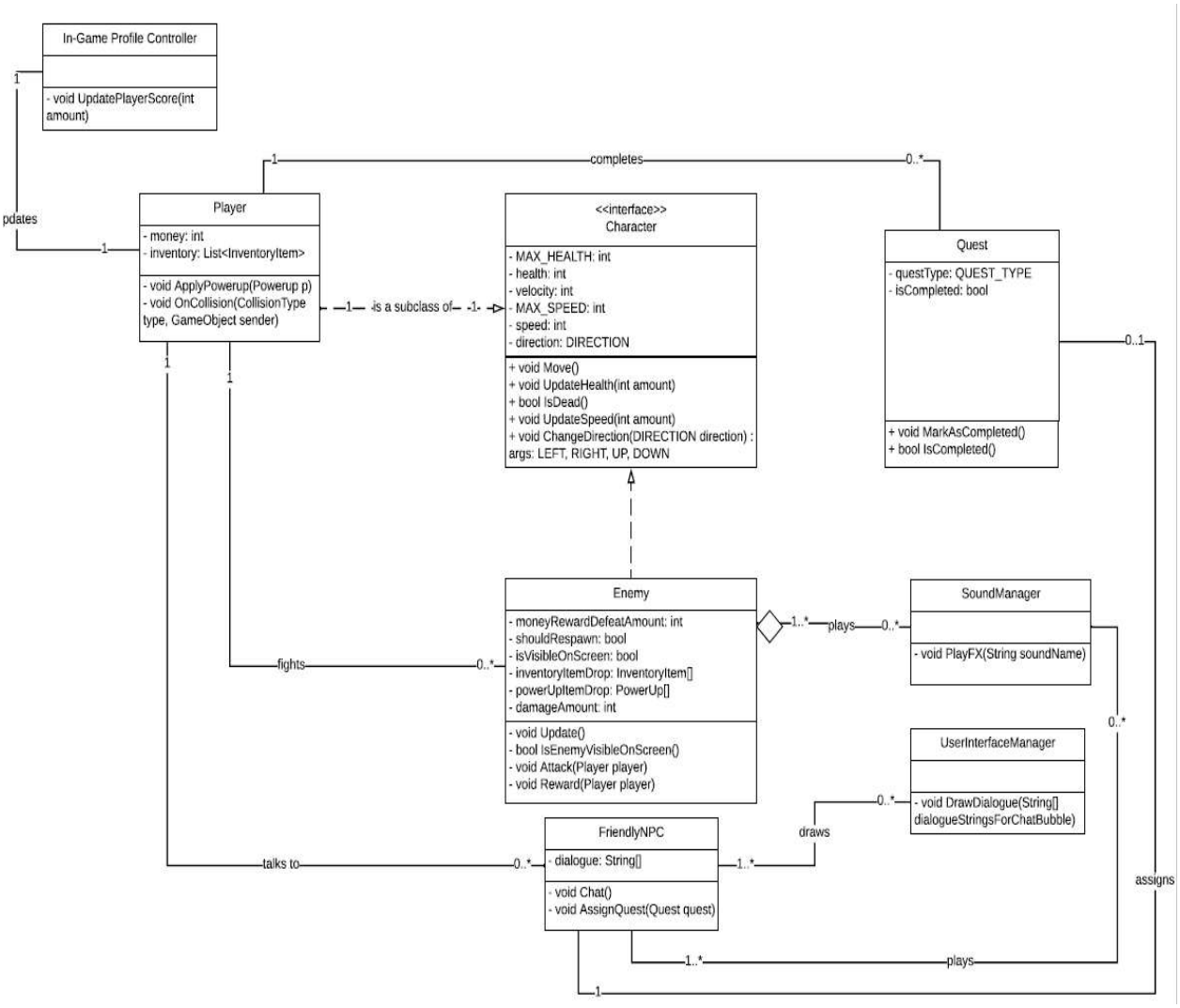
The “Player” class controls the character and its interactions with the environment. It uses many of the classes such as the powerup, character, enemy and audio classes. The player class is a central point for where the user interacts with many of the elements found in the game.

Powerup



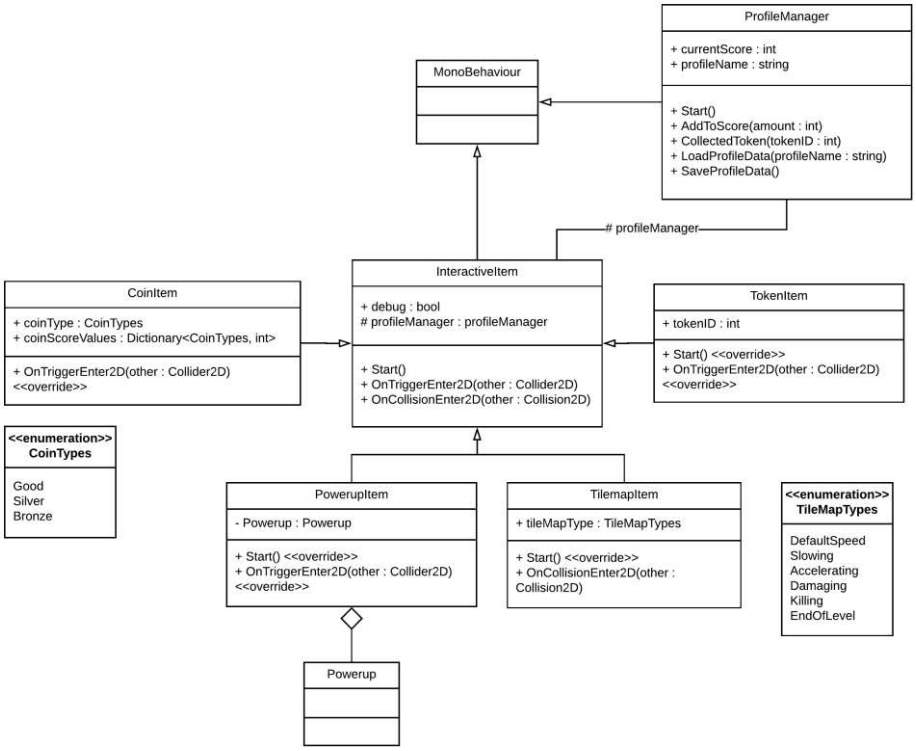
The powerup class is used by the player class to modify the characteristics of the character. The class uses modifiers to tell what powerup should be applied. Powerups are activated for a certain period of time. When the time is up the powerup class signals to remove the powerup.

Enemy



The Enemy class inherits from Character to provide shared functionality with Player such as move, health, etc. NPC stands alone since they do not have health or movement, just serve as a mediator to assign Quests to the Player as well as inventory/powerup/health modifiers. Both Enemy and NPC communicate with SoundManager and UserInterfaceManager to play sounds and display text in a dialogue UI box, respectively.

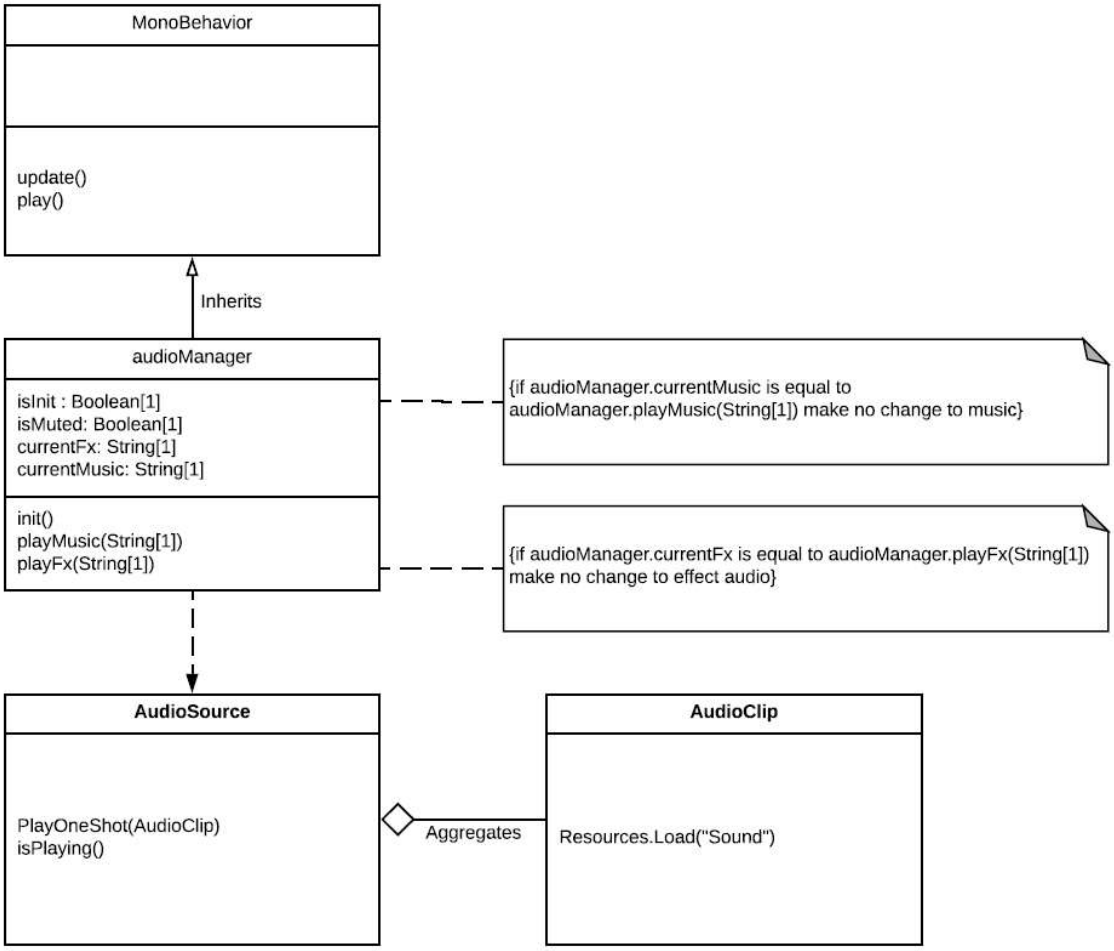
Items



The InteractiveItem class is what handles the interactions between in-game entities (NPC's, Enemies, The Player) and objects in the game that they can interact with. Four classes are derived from the InteractiveItem class: CoinItem, PowerupItem, TilemapItem, and TokenItem. These classes signal the in-game entities on what item they've interacted with, and the implementation of how to react is left up to the respective classes. They also signal to the ProfileManager when to update current player information, the Player itself when a tile or Powerup should affect it and to the SoundManager when an event should trigger a sound.

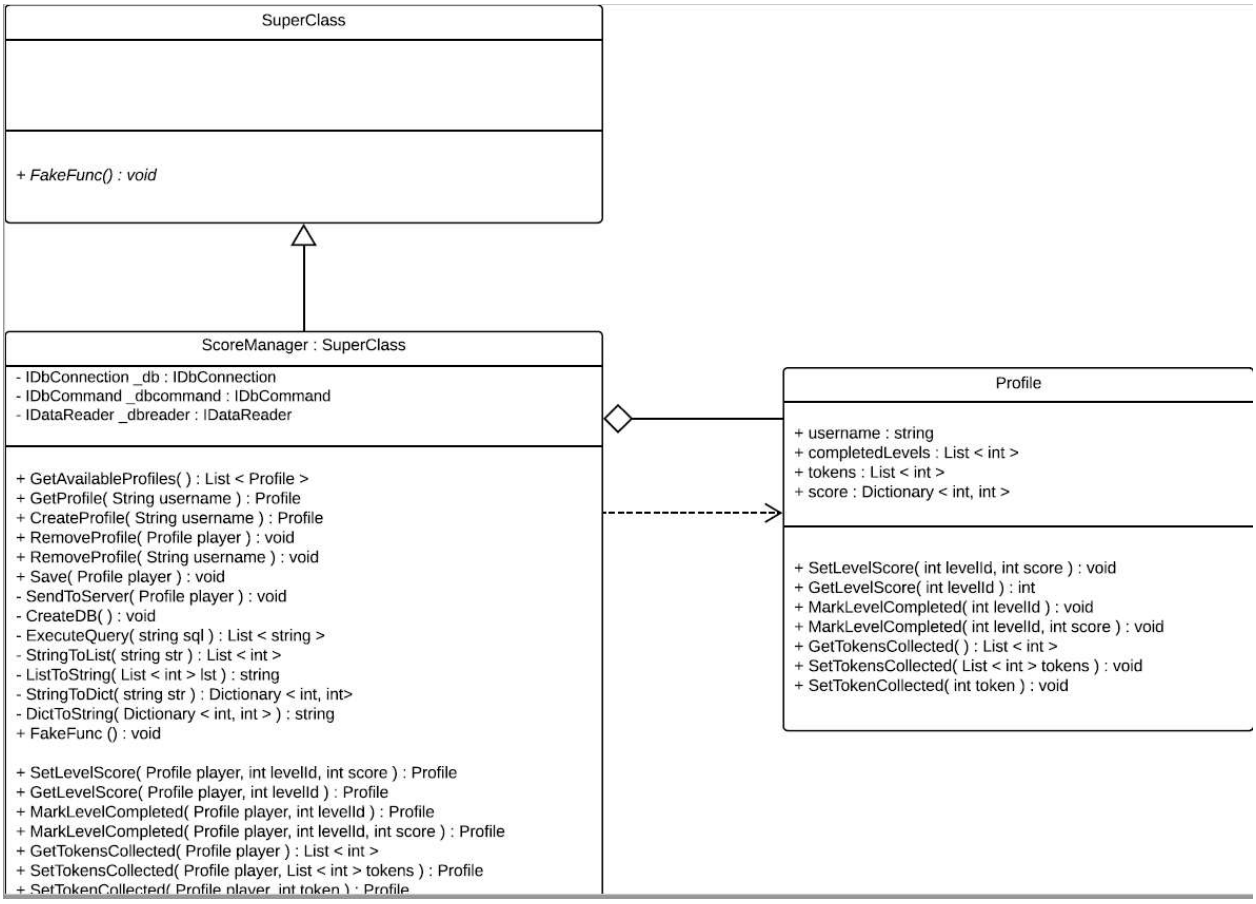
The ProfileManager interacts with the ScoreManager to update the current players profile information when a level is completed.

Audio Manager



The audio class creates Unity “AudioSource” objects and applies clips to them. The audioManager object is then used by the “Player” Object. Using the playFX or playMusic functions allows the proper audio to play when an action occurs, such as jumping or picking up a powerup.

Score Manager



The ScoreManager class is a handler for the Profile object. The ScoreManger handles the saving and loading of the profiles to and from the database, and can also act as a direct editor to the supplied Profile object. The Profile object acts as a temporary representation of the user in the database. The Profile object can be edited without effecting the database. Only once the Profile is saved back to the database using the ScoreManager will the database reflect the changes made to the profile.