**Music Madness Justification Document**

The primary reason that I wanted to make a prototype like Music Madness was to explore the possibilities of using the tool I created for the first prototype. In addition, I wanted to create a platform for music creation within Unity and some kind of game that provides a fun and unique way of creating music. My first tool analyzed audio sample data in real time and created ranges where hits would automatically be detected. I decided to use this data just to visualize the low bass frequencies being hit on each block in the game, but it could be used much more extensively to create more complex and meaningful visualizations.

Music Madness is currently a 3D platformer where the user jumps on top of boxes and uses the number keys in order to play samples contained within each “Music Box.” I originally wanted to create a 2D platformer in a 3 dimensional world where notes would fly towards the boxes and the player would have to collide with the box in time with the beats that were arriving. I decided against this because it is exactly like Guitar Hero and Rock Band only with the introduction of platforming. I believe that the approach I took gives much more control and freedom to the player in order to create original works of music.

The first version consisted of a box and the player and each box would play one sound when the player pressed P or loop the sound if the player was also holding down L. I quickly realized that this would not allow the players to make music in real time because they would have to travel between blocks to play each one. After that I added the functionality of pressing the number keys to control one of up to 10 sounds within each Music Box at a time. The player could then choose which clip was playing and switch between different ones much faster. Despite being faster, the player still couldn’t listen to more than one clip at a time without moving to a different block. The final revision was to have each clip attached to its own AudioSource in order to have the capability of each playing separately.

One main component of functionality that is somewhat missing from the game is the Record function. At the moment, the player can choose to record a series of actions on top of the blocks. The function will create a MusicCollection for every audio clip that is played, this object then keeps track of when each clip was started or stopped (and should keep track of looping as well) and has the default of the stopped time set to the length of the clip. Ideally the record function could be used to store music files onto a player’s device in order to use the music how they so desire. I would have implemented this fully, and tried extensively to do so, but the functionality for combining multiple audio clips into one is poorly documented and rarely done, so I never figured out exactly how.

The capabilities of this game are vast and I would really enjoy continuing work on the project. The way I see it now, the goal of the game will be to adventure the world collecting custom made sound clips and discovering new kits (music boxes or objects) to save for later use. It would be amazing for there to be a web site and database which stored each player’s songs and created a social platform of music creation where top songs were recognized similarly to how they are in the real world. This conversion of music creation into a friendly gamified process could create a whole new generation of musical artists and help to break down the barrier for entry into the field, as well as provide incredible visual stimulation which directly relates to the player’s actions and creations.