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**Description of Current and Proposed System**

The system aims to let the user explore the idea of the automation of musical creativity through algorithmic musical composition and integrating concepts from music theory, genetic algorithms, and cellular automata theory.

Currently, the system has a basic GUI which allows the user to randomize colored blocks on the screen. These blocks represent musical notes and may be played using the play button provided in the GUI. Aside from the play button, we have also provided the user a stop and pause button to control the music being played. In addition to these features, we have given the users the option to edit each colored block. They are able to click on a colored block to activate or deactivate a note. In other words, they can compose or edit the current composition by clicking on the blocks shown on the screen.

Since this program still has limited functionality, we still intend to add more features. We plan on giving the user an option between two modes: Basic and Advanced. When a user selects the Basic Mode of the program, the user is given the option to choose the mood of the song. After selecting the mood, the user clicks the randomize button and the notes are generated on the screen. The user then has to click on the play button to hear the music which was created and the stop button to stop the playing of the music.

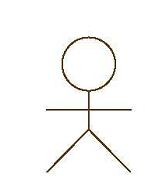
However, when a user selects the Advanced Mode of the program, the user is given the option to choose in which scale to play the song and at what tempo. After selecting from the different options, the user then clicks the randomize button and like in the previous case, the notes are generated on the screen. The user then has to click on the play button to hear the music which was created and the stop button to stop the playing of the music.

**Functional and Non-functional Requirements**

The functionalities of the program include the user being able to randomize notes on the screen and playing them. The user may be asked to input the type of music that they want to compose before clicking the randomize button. Also, the program must allow the users to edit certain parts of the song as well.

The program is coded in the C# programming language with the Microsoft XNA Framework. The program must be set-up before it is able to work. This is a product requirement and a part of the non-functional requirements of the program.

**Use Case Diagram**



**User**