Team BZ-Squared Design Document

Section 1: Goals

* Use the four editors and code created by Fall 2016 CS383 teams to create one “super” editor that combines and extends the features of the above
* Create an editor with audio handling and play back
* Extend the application to include an editor for creating animations for the Goofy Glasses of the UIdaho Marching Band

Section 2: Overall Application

* Menu Bar: should provide import/export; standard save, open, new functionalities; should provide access to pre-defined animations through an animation library; some editing functionalities
* Editor Window: should show the current frame being edited, with the extra canvas, any animations currently used
* Left toolbox: should display the current music file name, time duration of current frame, the previous frame, colors, color selection, other detailed editing, music file related functionality
* Right toolbox: should display the next frame, the arrow key duplication functionality, the standard clear, create new, duplicate this, and delete functionality, interface for new animations
* Music Bar: should display wave format of linked music file, should be blank if no music file, should display length of music file, and where in the song is the current frame
* Frame List: should display all frames in the animation, should allow the selection of multiples of them, should display the appearance of all frames

Section 3: Menu Bar

* “File” Menu
  + New: creates a new application
  + Open: allows user to open a previously saved animation
  + Save: allows user to save an animation to the computer
  + Import: allows user to import a previously saved animation into the current animation
  + Export: allows user to export the current animation to another animation
* “Edit” Menu
  + Import Animation: opens a dialog that allows user to import a pre-set animation, like a sine wave
  + Generate Text: opens a dialog, allows the user to input text and allows that text to generate an animation sequence
  + Math Animation: allows certain animations to be generated by a math equation.

Section 4: Editor Window

* Canvas: should be the number of cells total displayed for editing, e.g. 8 by 20; all cells should be editable
* Frame: the actual 4 by 10 grouping of cells in the center that is actually sent to the .tan file
* Cells: should be the colored blocks representing the windows of the tower
* Index: should display which frame is being edited over the total number of frames, e.g. 4/8
* Should provide a functionality that modifies display when creating animations for marching band
  + i.e., smaller frame and canvas, etc.

Section 5: Left Toolbox

* Left-Color
  + Displays the color used when the user left-clicks on a cell
* Right-Color
  + Displays the color used when the user right-clicks on a cell
* Color Select
  + Displays the selection of colors for the user
  + Allows the user to change Left-Color by left-clicking on one of the selections
  + Allows the user to change Right-Color by right-clicking on one of the selections
* Previous Frame
  + Displays the previous frame in the lineup
  + Blank if the previous frame does not exist/has not been edited
  + Otherwise displays the animation on said frame
* Frame Length
  + Displays the length of time the current frame will last
  + Modifiable with up/down arrows or by typing a new value
  + Display time should be in seconds
* Audio File
  + Allows the user to attach a music file to the animation
  + Opens dialog when clicked, allowing user to specify file from computer
* Undo/Redo Buttons
  + Allows the user to take away last action or re-commit last action
* Generate Frames
  + When clicked, uses the current frame duration and the length of specified audio file to generate enough frames to fill the length of the music

Section 6: Right Toolbox

* New Frame After Current
  + Inserts a new frame after the current frame being edited
* Copy to New Frame After Current
  + Copies the content of the current frame to another and inserts it after the current frame
* Delete Frame
  + Deletes the current frame
* Next Frame
  + Displays the next frame in the lineup
  + Blank if frame does not exist/has not been edited
  + Otherwise displays the animation of the next frame
* Arrow Key Duplicate
  + Provides eight arrow keys in the standard compass directions
  + Clicking one copies the information of the current frame into a new frame, and then shifts that new frame according to the arrow clicked
* Preview Animation
  + Allows the user to play the current animation
  + If a music file is specified, it should play the music alongside

Section 7: Frame List

* Displays the current list of frames in the animation
* Allows a user to select a frame and jump to the editing window for it
* Allows the user to select multiple frames and edit their duration
* Displays only the frame view, canvas does not display

Section 8: Music Bar

* Displays the music file as a music curve
* Displays the music file length
* Uses a vertical line to demonstrate where in the music file the current frame will map to
* Blank if no file specified

Section 9: Output

* Output will be, at this point, standard .tan2 file
* Sends total number of frames, last color used, version of editor, what music file is attached, color sequence, and the frame information themselves
* Should also handle old .tan2 file formats