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\documentclass[12pt]{article}
\usepackage[latin1]{inputenc}
\usepackage[T1]{fontenc}
\usepackage[english]{babel}
\usepackage{amsmath}
\usepackage{amssymb,amsfonts,textcomp}
\usepackage{color}
\usepackage{array}
\usepackage{supertabular}
\usepackage{hline}
\usepackage{hyperref}

\begin{document}

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\clearpage{\centering\selectlanguage{english}\bfseries\color{black}
DESIGN SPECIFICATION FOR
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{\centering\selectlanguage{english}\bfseries\color{black}
\Large Goofy Lights Editor
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Date: 03/30/17
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{\centering\selectlanguage{english}\bfseries\color{black}
Prepared for:
\par}

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{\centering\selectlanguage{english}\bfseries\color{black}
Bruce Bolden
\par}

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\fi
{\centering\selectlanguage{english}\bfseries\color{black}
Prepared by:
\\Team 1
\par}

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{\centering\selectlanguage{english}\bfseries\color{black}
{\vitshape Christian Baisch\par}
{\vitshape Joshua Bonn\par}
{\vitshape Timothy Clemans\par}
{\vitshape Wyatt Knickerboncker\par}
{\vitshape Homaja Marisetty\par}
{\vitshape Hanna Salian\par}
{\vitshape Maxwell Thornburg\par}
{\vitshape Garrett Workman\par}
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\clearpage\centering\selectlanguage{english}\bfseries\color{black}
\foreignlanguage{english}{\MakeUppercase{\ }}\foreignlanguage{english}{\MakeUppercase{Goofy Lights Editor SSRS}}
\par}
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{\centering\selectlanguage{english}\bfseries\color{black}
TABLE OF CONTENTS
\par}
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\setcounter{tocdepth}{9}
\renewcommand\contentsname{}
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\tableofcontents
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\clearpage\section{General}
This Design Specification for Goofy Lights Editor outlines the anticipated program functions that will be needed.
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\subsection{Timeline}
This timeline is a rough estimate for the future development of the Goofy Lights Editor Project for the Goofy Glasses.\ The timeline will be subject to change over time.
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\begin{itemize}
\item
Week One (3/6 - 3/13) - Complete rough draft of Design Specification.
\item
Week Two (3/13 - 3/20) - Spring Break
\item
Week Three (3/20 - 3/27) - Initial Development (First Sprint): Sections of the editor were divided amongst team members. The sections were divided into: User Interface Shell - Max and Tim, File Save/load - Garret and Wyatt, Grid - Homaja and Sam, State changer - Hanna and Josh.
\item
Week Four (3/27 - 4/3) - Continued Development: Each sub-team continues developing their individual section. Keep documentation up to date.
\item
Week Five (4/3 - 4/10) - Continued Development: Complete build-in user interface using Qt by bringing all of the pieces together.
\item
Week Six (4/10 - 4/17) - Continued Development: Add in extra developments, such as; color wheel, synced audio, etc...
\item
Week Seven 4/17 - 4/24) - Continued Development: Finish the previous sprint and put the pieces into a prototype for presentation..
\item
Week Eight (4/24 - 5/1) - Continued Development: Present the prototype and update all documentation.
\item
Week Nine (5/1 - 5/8) - Finish Development: Have the final program with full documentation, run final testing, and turn in project.
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\end{itemize}
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\clearpage\section{File Management}
\subsection{Saving}
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\begin{itemize}
\item Grid configurations can be able to be saved locally so they don't have to be recreated every time.
\end{itemize}
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\begin{itemize}
\item Entire animations can be able to be saved locally.
\end{itemize}
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\subsection{Loading}
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\begin{itemize}
\item Audio files will be able to be loaded in so that they can be paired up with the animation.
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\end{itemize}

\begin{itemize}
\item Previously saved animations can be able to be loaded, overwriting the current animation project. A dialog box will appear to warn the user that they will be overwriting the current animation project.
\end{itemize}

\begin{itemize}
\item Grid configurations can be loaded to overwrite a single frame in an animation. This will help prevent re-creation of frequently used grid configurations.
\end{itemize}

\subsection{Auto-save}
\begin{itemize}
\item One file will be kept during the program's operation that will be \newline continuously overridden once every five minutes. It will automatically save out the entire animation that is currently being worked on.
\end{itemize}

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\clearpage \section{Goto State}
The user will be able to scroll through any of the existing states, as well as add to or delete any of the current states.
\subsection{Move Slider}
Will set slider to go to any state at that particular point of time. The slider maximum time will be set to the total time it takes for all the frames.
\subsection{State time}
Will give option for the user to select how long the state should play and give the option to speed up the runtime. If user doesn't provide any value, then the default time the state stays would be set to 1 second.
\section{Dimensions}
This section contains dimensions for the adjustable grid.% and tower.
\subsection{Grid}
There will be an option for user to select the grid dimensions and the condition would be set to provide the dimensions greater than tower grid. If the user doesn't provide dimensions, then the default would be set to 20*10.
%\subsection{Tower}
%The tower grid dimensions will be 4*10.

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\clearpage\section{Show Preview}
The Show Preview will allow the user to run the animation they've created in an emulator, which will give them an accurate representation of what their show will look like when played on the grid size they've selected.
\subsection{Mock-up}
% ADD Screenshot later
%\insert screenshot after final version\
\subsection{Functionality}
\begin{itemize}
\item Open Preview window or section
\begin{itemize}
\item A button or menu option that will bring up the Show Preview window.
\end{itemize}
\item Adjust playback grid size
\begin{itemize}
\item The playback grid will default to whatever size the user initially set their show to. But there will be a way (inputs for number of rows and number of columns) for the user to change the grid size so they can see what their show might look like on smaller or larger grids.
\end{itemize}
\item Move Tiles
\begin{itemize}
\item A control box which allows the user to shift their grid size (if smaller than the full 20x10 grid) around the main grid.
\end{itemize}
\item Manage Preview Playback
\begin{itemize}
\item Start\textbackslash Pause : The traditional Play triangle and double-bars Pause button to start and pause the preview playback.
\item Stop : Traditional Stop button with square icon to stop the preview playback.
\item Adjust playback speed : A few playback speed presets (0.25x, 0.5x 0.75x, 1x, 1.25x, 1.5x, 1.75x), default is 1x speed.
\item Quit : Allows the user to exit the program
\item Add Frame : The user can add individual frames.
\item Delete Frame : Lets the user delete frames.
\end{itemize}
\end{itemize}

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\clearpage\section{Stamps}
The stamps function will allow the user to access previously saved images in a quick manner.

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\subsection{Functionality}
When clicking on the "stamps" icon, a box will pop up with different previously saved stamps. The user will then click on one and it will be added
to the current frame. Preset stamps include:
\begin{itemize}
\item Shapes
\item Letters
\item Numbers
\end{itemize}
\subsection{Creating Stamps}
The user will also be able to add stamps to the program. A "save as stamp" option will be added to the tool bar. This allows for the current frame to
be added to the stamp feature.

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\clearpage\section{Mass Editing}
The user will be able to select multiple frames of an animation.
\subsection{Copy}
The user will be able to save a grouping of frames to a local clipboard, saved until the program is closed or a new set of frames is copied.
\subsection{Paste}
The user will be able to insert the copied frames before or after a selected frame. They will be able to do this with the same set of copied frames,
until they copy a new set of frames or close the program.
\subsection{Insert}
The user will be able to insert frames before or after a selected frame. They may do this as many times as desired, within reasonable limitations,
and will always insert a copy of the selected frame immediately before or immediately after the selected frame.

\clearpage\section{Audio Integration}
The user will be able to import audio files for playback and time-line length creation
\subsection{Playback}
The user will be able to have the audio file play at the same time as a preview of their animation to give an accurate representation of the final
output
\subsection{Time-line Length}
The user will be able to use the duration of the audio file to create an accurate working length for creating their animation

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\clearpage\section{Color Editor}
The user can also select from a preset selection of common colors and assign it to a cell. He will also be able to select any color from the a color
wheel.
\subsection{Color Selection}
There will be two modes of color selection: the color wheel, and a list of color presets.
\subsubsection{Color Wheel}
The user will click their mouse on the color wheel to select a base color. Then, he can adjust the saturation and gray-scale by dragging his mouse
within a colored box. He will see the currently selected color in a box nearby.
\subsubsection{Color Presets}
There will be a list of twelve preset colors. The user can click these squares to automatically assign a color.
\subsection{Assigning Color}
The user will be able to assign color to a square in the current state by left clicking the square with their mouse. He can clear a square of any color by
right clicking on a square. If no color is assigned to a square, the default will be no color.

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\clearpage\section{Additional Features}

\subsection{Add-Ons to File Saving} A parser and IO system for the file saving will be added at a later time.
\subsection{Preview Slider} The Preview window will have a "preview area" that shows the timeline of the current show. The preview area will also
have a slider which can be dragged back and forth along the timeline to control the preview playback.
\subsection{Sync with Audio}
A simple checkbox to indicate whether the playback will start the designated audio track when the preview playback is started.

\subsection{Paint Brush Coloring}
The user will be able to hold left click and drag their mouse over squares. This will paint all the squares it touches. The user can also hold right click to
erase the squares.
\subsection{Assigning Personal Presets}
The user will be able to assign personal colors to the presets. The user will select a color on the color wheel. Then, the user will right click on a preset
to assign the current color to that preset.

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\end{document}

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