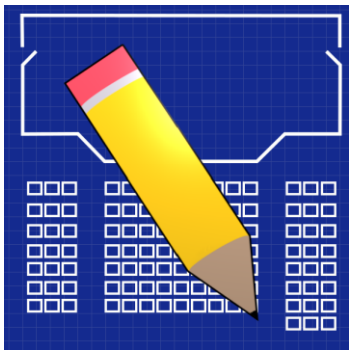

Software Design Document

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1 Contents

2 Introduction

2.1 System Overview

Stage plan is a desktop application which creates stage plots, which are pictures similar to blueprints that tell stagehands how to set up the stage for a performance or event. The items the user can place on the stage plots include stage curtains, chairs, and tables. The finished plots can be saved to a native format, and can be exported to a picture and/or printed.

2.2 Supporting Materials

Java JVM

2.3 Definitions and Acronyms

Flyrail – Stage system for raising and lowering things on and off the stage

Flown in – Refers to a thing on the flyrail system being present on the stage

Flown out – Refers to a thing on the flyrail system not being present on the stage

D&D – Drag and Drop aka Stage Object. Refers to items from the right panel which can be positioned on the stage.

PNG – Portable Network Graphics image format

PDF – Portable Document Format. A document format.

JPEG – Joint Photographic Experts Group image format

GUI – Graphical user interface

PM – Project Manager

AM – Assistant Project Manager

3 Functional Requirements Mapping Overview

Functional Requirement	Design Artifact
1: The user shall be able to minimize the application by clicking the '-' in the top right corner.	Figure 1
2: The user shall be able to select the toolbar button that looks like a square or two overlapping squares in order to resize the application windows.	Figure 1
3: The user shall be able to exit the application by clicking the 'X' in the top right corner.	Figure 1
4: If the user tries to exit the application without saving, the user shall be prompted to save.	Figure 3
5: The user shall be able to access a drop-down list of file options after clicking a "File" tab.	Figure 6
6: The user shall be able to load a stage plot from a file into the system through a dialog opened from the file drop-down menu.	Figure 4
7: The user shall be able to select cancel when loading a stage plot	Figure 4
8: The user shall be able to save the current stage plot into a file through a dialog opened from the file drop-down menu or from a macro (ctrl-s)	Figure 6
9: The user shall be able to save the file without a dialog if it has been saved in a dialog previously through the file drop-down menu or from a macro (ctrl-s)	Figure 1
10: The user shall be able to print the stage plot from the file drop-down menu off of a printer selected via a dialog, or through a macro (ctrl-p)	Figure 6
11: The user shall be able to export the stage plot to a .pdf file from the file drop-down menu.	Figure 6
12: The user shall be able to access a drop-down list of tool options after clicking a "Tools" tab.	Figure 5
13: The user shall be able to "cut" a selected Stage Object from the tools drop-down list, or from a macro (ctrl-x)	Figure 5
14: The user shall be able to "copy" a selected Stage Object from the tools drop-down list, or from a macro (ctrl-c)	Figure 5
15: The user shall be able to paste a "cut" or "copied" object to the Stage from the tools drop-down list, or from a macro (ctrl-v)	Figure 5

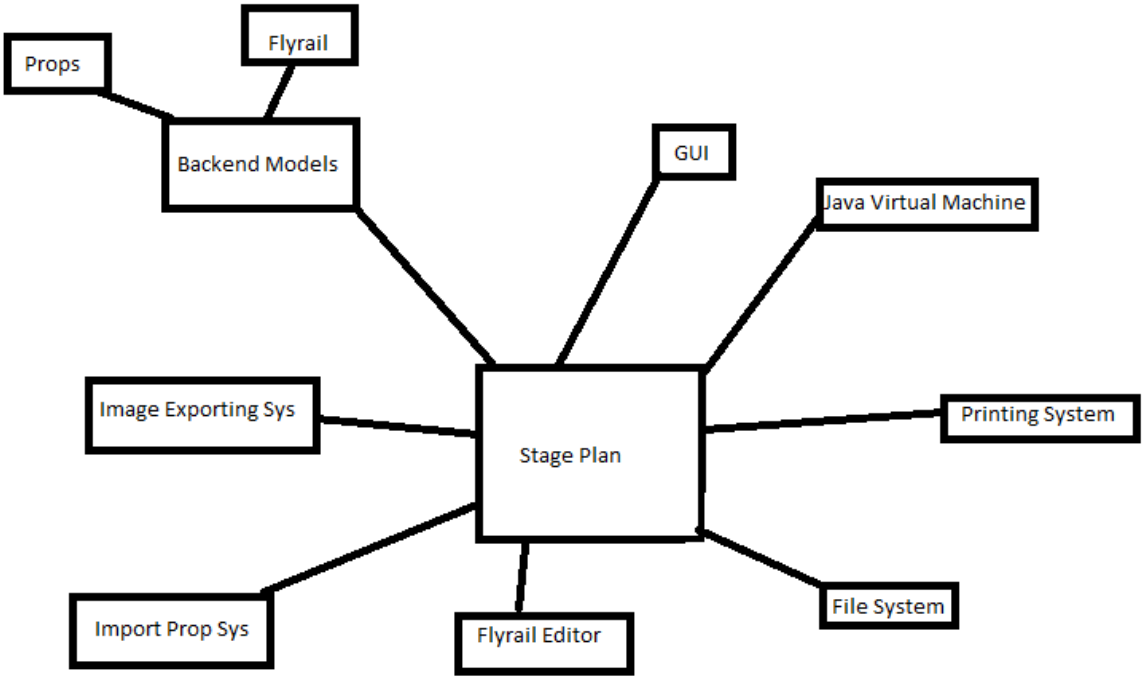
16: The user shall be able to undo an action from the tools drop-down list, or from a macro (ctrl-z)	Figure 5
17: The user shall be able to redo an undo'd action from the tools drop-down list, or from a macro (ctrl-y)	Figure 5
18: The user shall be able to zoom in from the tools drop-down list	Figure 5
19: The user shall be able to zoom out from the tool drop-down list.	Figure 5
20: The user shall be able to rotate a selected Stage Object from the tools drop-down list, or from a macro (ctrl-r).	Figure 5
21: The user shall be able to cancel a rotation by pressing "Esc"	Figure 1
22: The user shall be notified by the system to select an object, if they attempt to rotate without selecting an object first	Figure 10
23: The user shall be able to add a textbox from the tool drop-down list	Figure 5 (Edit Label)
24: The user shall be able to select an object from the right panel by left clicking it	Figure 1
25: If the user drags an object from the right panel to the Stage view, it shall be scaled to the right dimensions.	Figure 1
26: The user shall be able to place an object in the Stage panel by dragging and dropping	Figure 1
27: If the user drags an object from the Stage view to the right-panel, it shall be un-scaled.	Figure 1
28: If the user drags an object to an invalid location, the cursor shall be replaced with an "X"	Figure 8
29: If the user drags an object back to a valid location, the cursor shall be set back to normal.	Figure 1
30: If the user drops an object on an invalid location, the object shall not be placed, and shall be deselected.	Figure 1
31: The user shall be able to deselect an object by clicking on the right panel, without clicking an object	Figure 1
32: The user shall be able to choose from a menu of options by right-clicking on an object in the right panel	Figure 9
33: The user shall be able to view the height, width, and image of an object by clicking "properties" from the menu of options.	Figure 9
34: The user shall be able to create a new object from a dialog that starts with the same characteristics as the object selected by clicking "clone" from the menu of options.	Figure 9

35: The user shall be able to remove the object by selecting "delete" from the menu of options.	Figure 9
36: The user shall be prompted for confirmation before permanently deleting an object from the list of available objects.	Figure 12
37: The user shall be able to see a menu of options by right-clicking on the right panel.	Figure 7
38: The user shall be able to create a new Stage Object by clicking "New Object."	Figure 1
39: The user shall not be able to submit a new object without filling out the dialog completely.	Figure 11
40: The user shall be able to scroll through the list of objects in the right panel	Figure 1
41: The user shall be able to pan the Stage view by dragging the view.	Figure 1
42: The user shall be able to deselect an object by left-clicking the stage view.	Figure 1
43: The user shall be able to view a menu of option by right clicking the stage view.	Figure 7
44: The user shall be able to paste an object from the clipboard by selecting "paste" from the menu of options.	Figure 7
45: The user shall be able to zoom in on the Stage view by selecting "Zoom in" from the menu of options.	Figure 7
46: The user shall be able to zoom out on the Stage view by selecting "Zoom out" from the menu of options.	Figure 7
47: The user shall be able to select an object on the Stage by left-clicking it in the Stage view.	Figure 1
48: The user shall be able to change an object's location on the Stage by dragging it in the Stage view.	Figure 1
49: The user shall be able to remove an object from the Stage by dragging and dropping it to an invalid location.	Figure 1
50: If the user drags an object from the Stage to an invalid location, the cursor shall be replaced with an "X".	Figure 8
51: If the user drags an object from the Stage to an invalid location, and then back to a valid location, the cursor shall be resumed to normal.	Figure 1
52: If the user double-clicks on a text box on the stage, they shall be able to edit the text.	Figure 2
53: The user shall be able to stop editing the text in a textbox by clicking	Figure 1

outside of it.	
54: The user shall be able to "cut" an object from the Stage by right clicking it and selecting "cut".	Figure 9
55: The user shall be able to "copy" an object from the Stage by right clicking it and selecting "copy"	Figure 9
56: The user shall be able to remove an object from the Stage by right clicking it and selecting "delete"	Figure 9
57: The user shall be able to see information about an object from the Stage by right clicking it and selecting "properties"	Figure 9
58: The user shall be able to zoom in on the stage view by scrolling up on the mouse while holding ctrl	Figure 1
59: The user shall be able to zoom out on the stage view by scrolling down on the mouse while holding ctrl	Figure 1
60: The user shall be able to fly a rail in by selecting "Fly in" next to that rail in the left panel.	Figure 1
61: The user shall be able to fly a rail out by selecting "Fly out" next to that rail in the left panel.	Figure 1

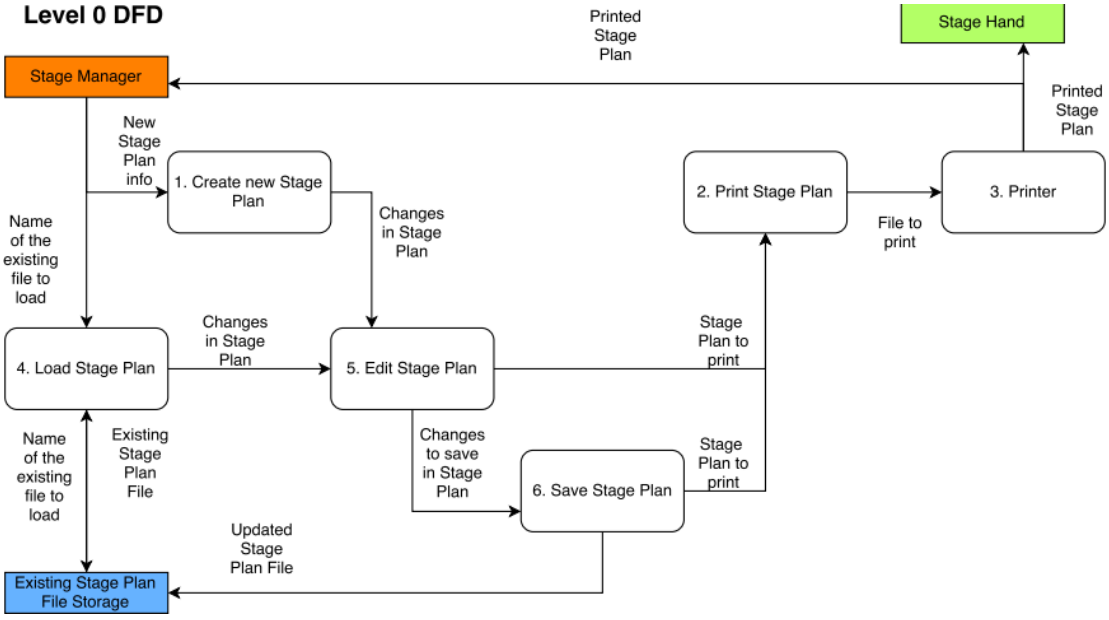
4 High Level Design

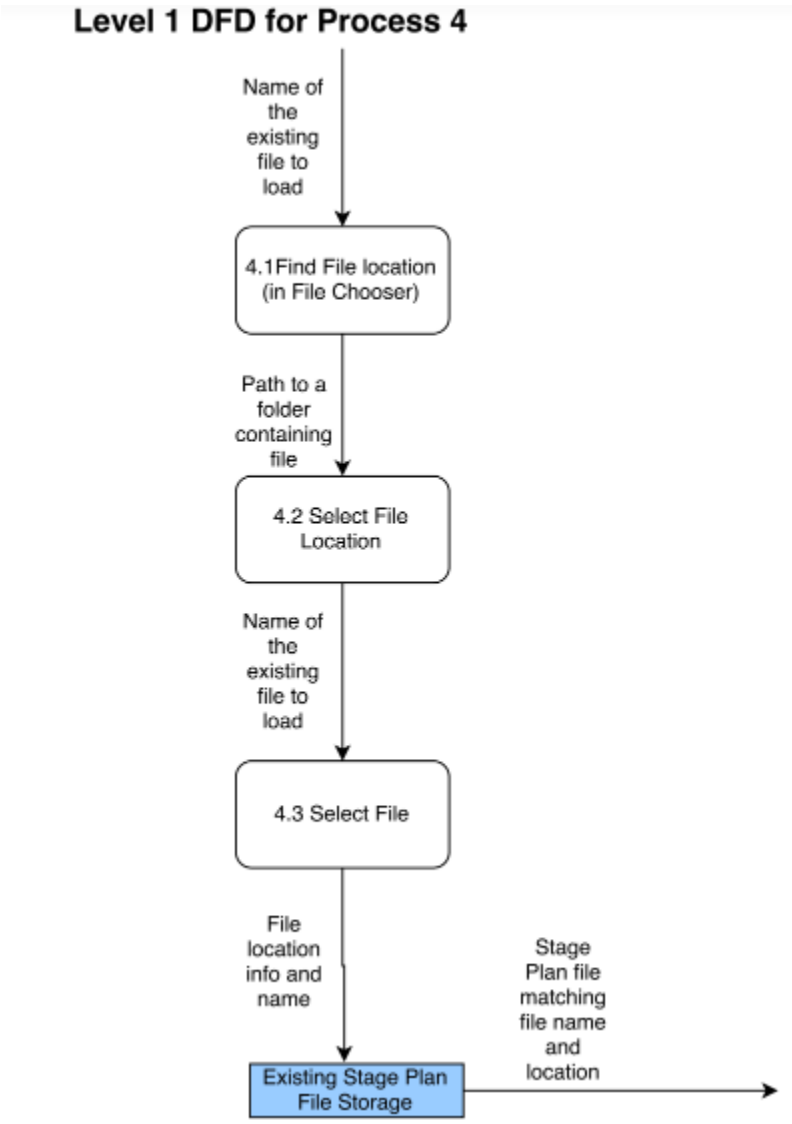
4.1 Conceptual View (Architectural Context Model)



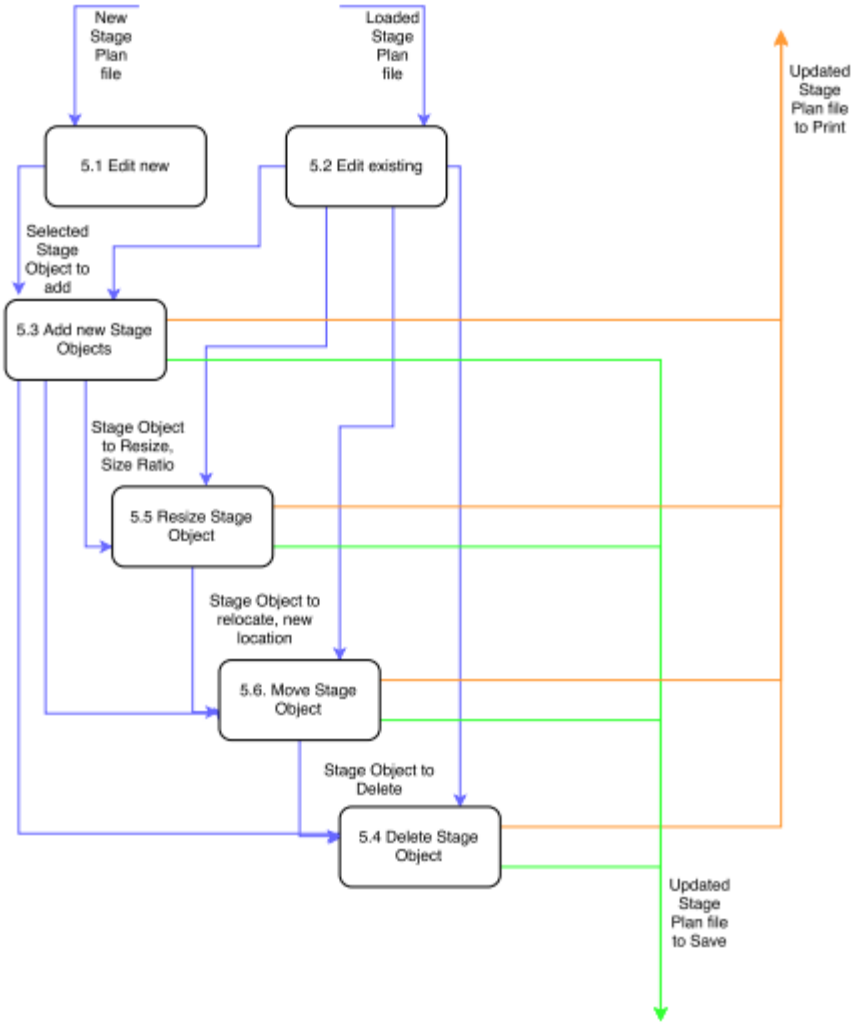
5 Low Level Design

5.1 Process Model (Data Flow Diagram)

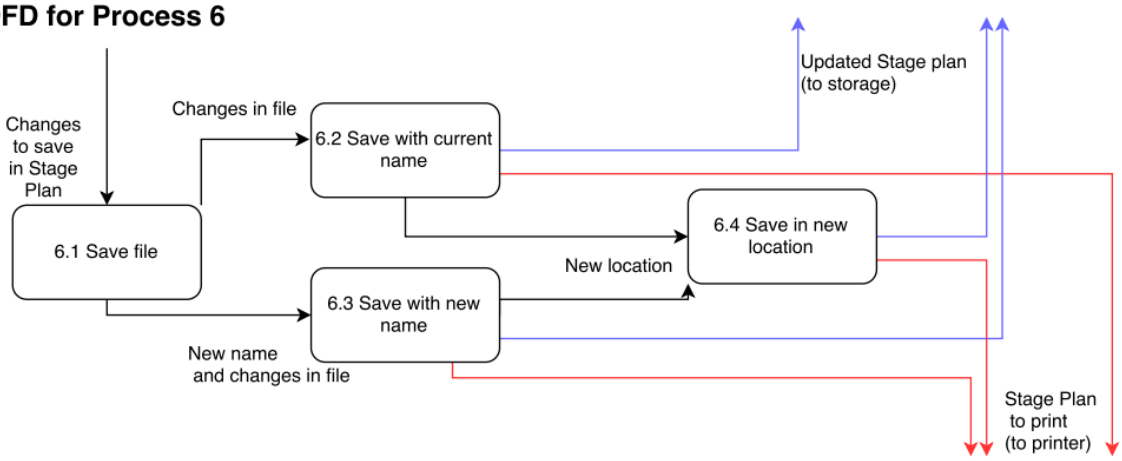



Level 1 DFD for Process 4
Name of the existing file to load
4.1Find File location (in File Chooser)
Path to a folder containing file
4.2 Select File Location
Name of the existing file to load
4.3 Select File
File location info and name
Stage Plan file matching file name and location
Existing Stage Plan File Storage

Level 1 DFD for Process 5



Level 1 DFD for Process 6



6 User Interface Design

6.1 Application Control

Stage Plan will consist of one main screen where all activities will take place, including editing plots, saving, and loading. All non-plot editing controls, such as saving and loading, will be always available through toolbar menus. The look and feel of Stage Plan will be the standard look provided by Java Swing.

6.2 Screen 1-2

Figure 1 – Main Screen

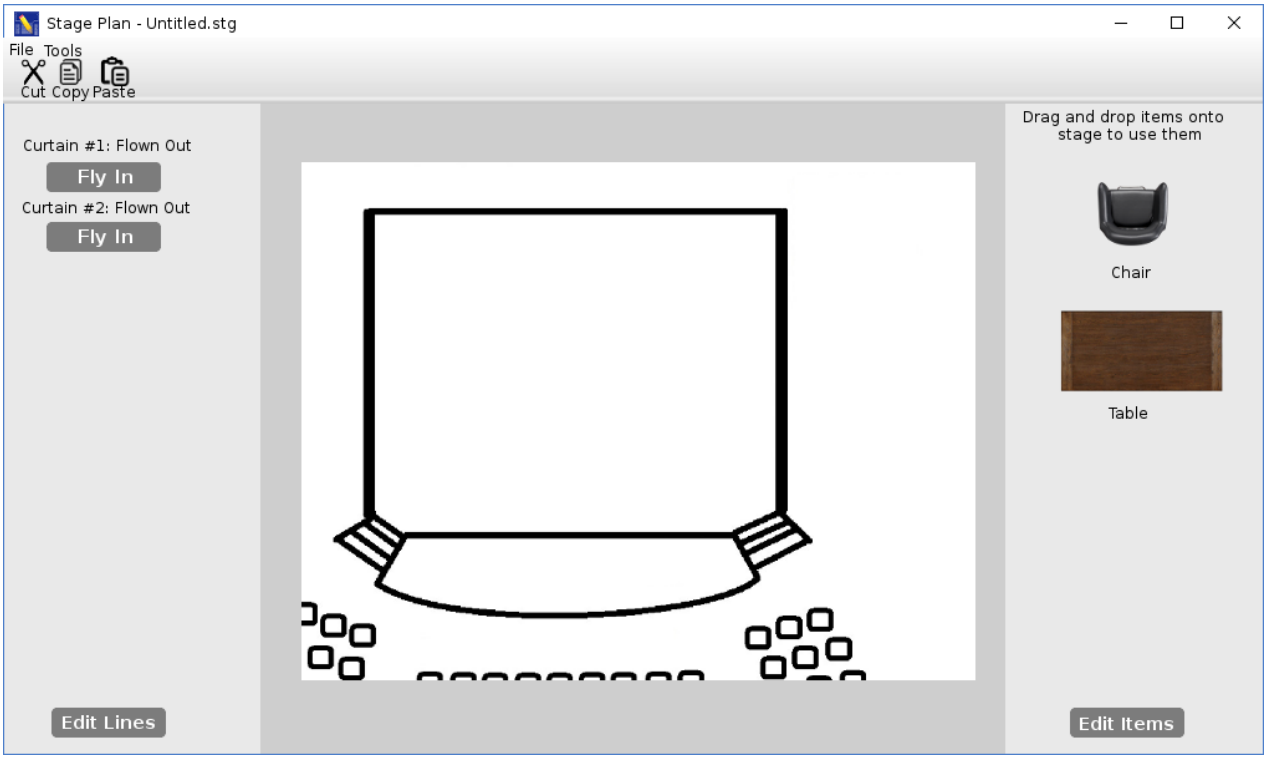


Figure 2 – Editing Text

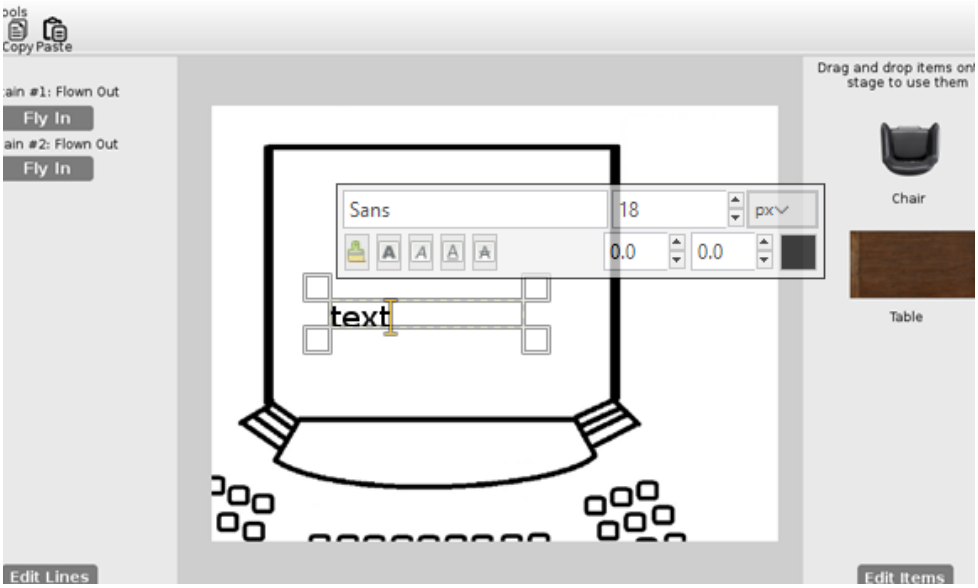


Figure 3- Save Dialog

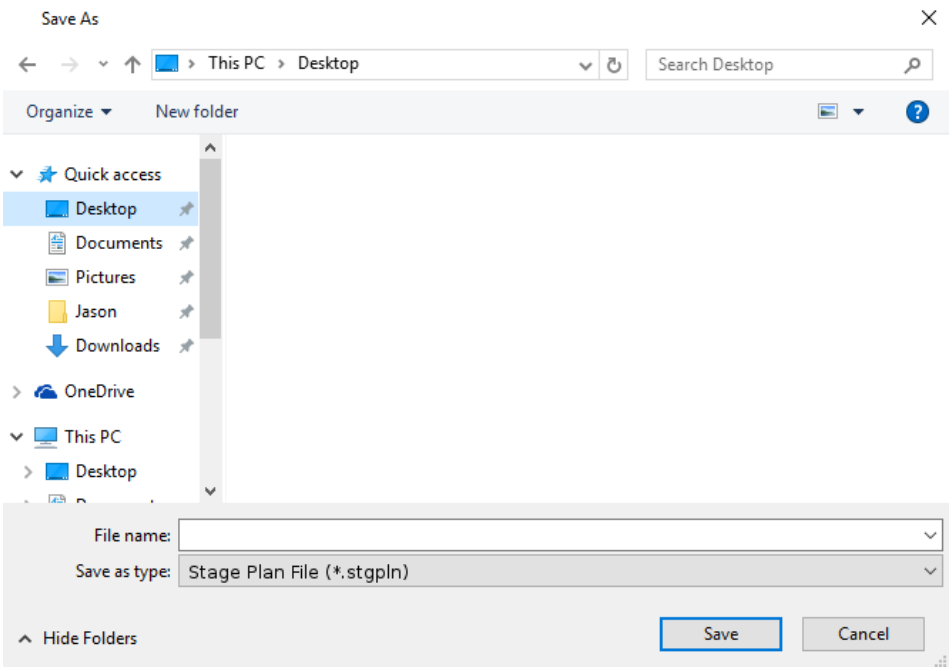


Figure 4 – Load Dialog

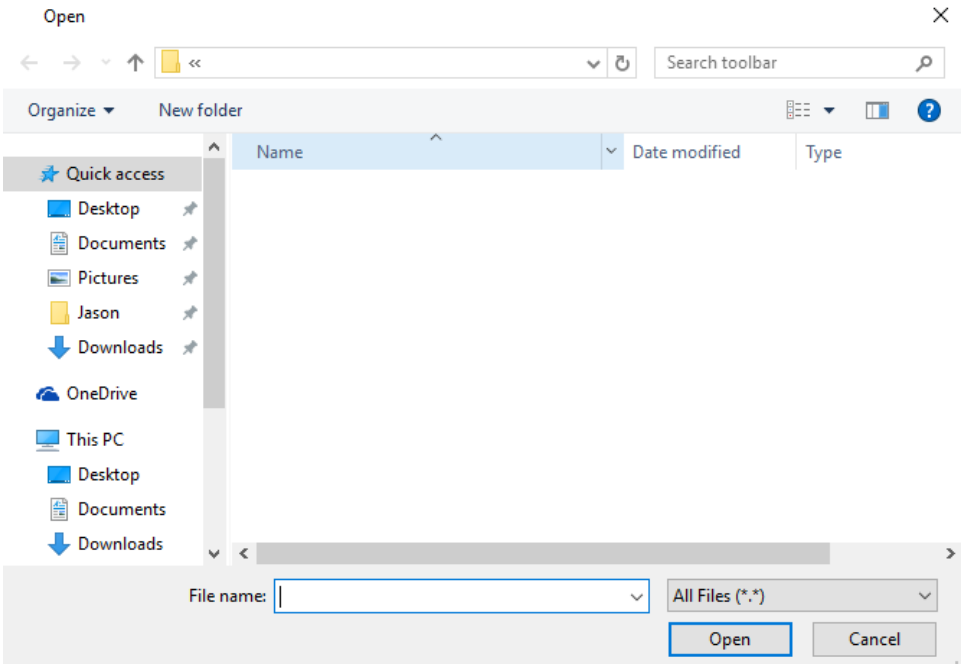


Figure 5 – Tool Menu

Figure 6 – File Menu

Figure 7 – Panel Right Click Menu

Figure 8 – X Cursor

Figure 9 – Object Right Click Menu

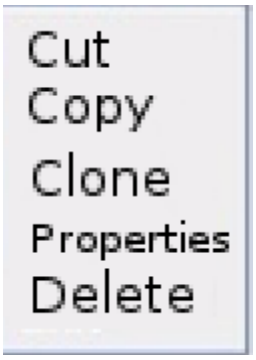


Figure 10 – Rotation Error Message

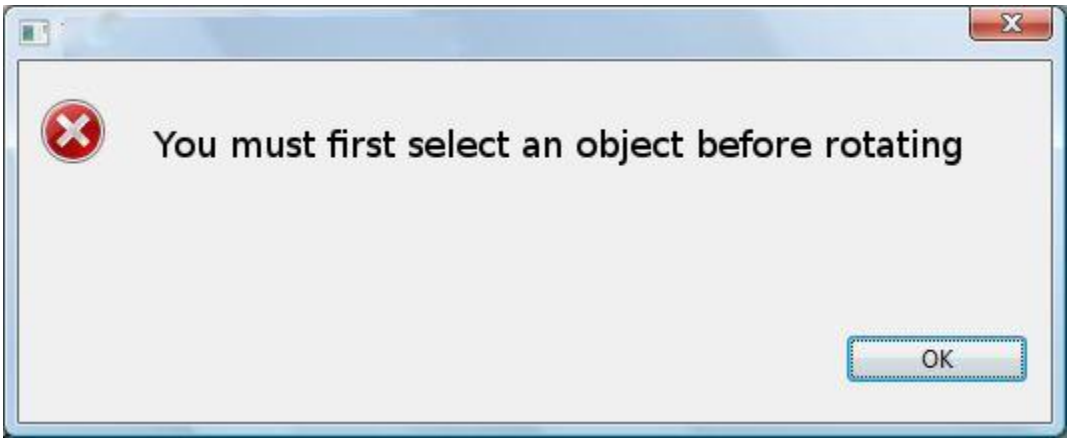


Figure 11 – Object Creation Error Message

Figure 12 – Deletion Prompt

7 Final Schedule

See attached Gantter document.