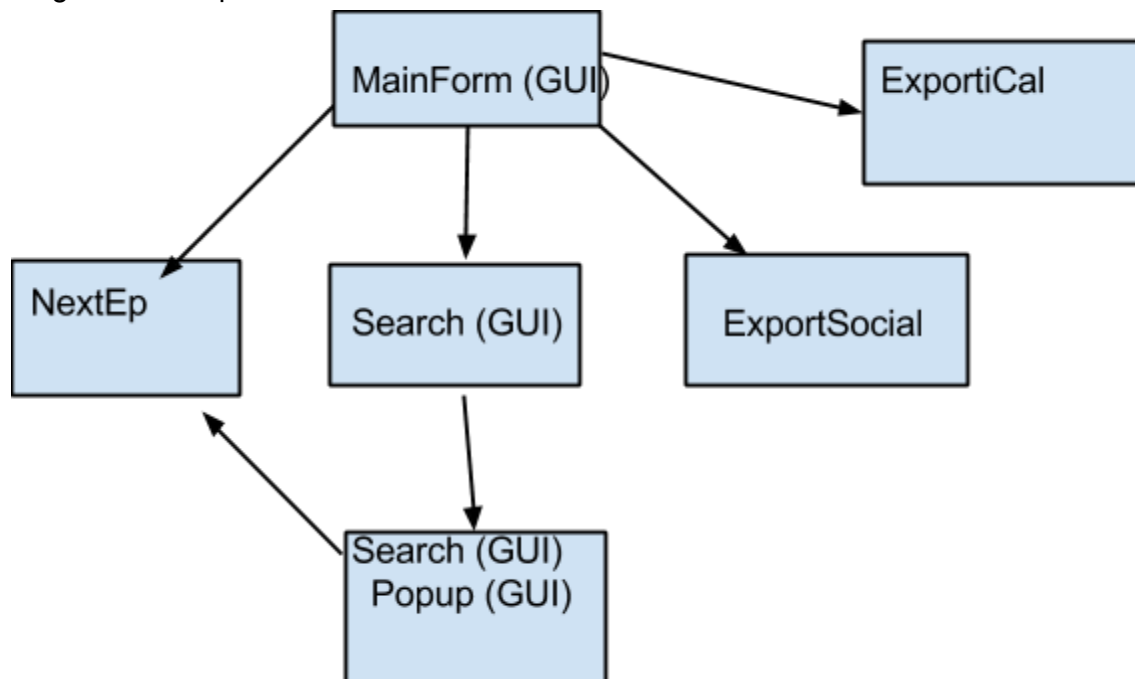


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### Incremental/Regression Testing

Diagram of components and their interactions:



Define all components:

- Main Form - The primary window created upon execution of the program. This window has the ability to either start a search for a show (which will create a search window) or export your show list to a social network via exportSocial through the menu bar option to do so.
- exportSocial - This is located in top menu bar of the Main Form and allows you to tweet from your Twitter account or Facebook account. You can modify what the tweet will say, but the default message is "I just added <insert show names> to Buggy'sTV Guide. via @BuggysTV" It takes as input the message to post and outputs the message to the users Twitter or Facebook account.
- NextEp -Called in popup and in mainForm when a show is added, it returns the upcoming episode of the show in a String object. The string includes the name of the

show, title of the episode, the date, and the time. If no upcoming episode is found, then returns "No upcoming episode".

- Search - Called by MainForm and reaches out to online database and displays results of database query (as specified in the Main Form) in a GUI window. A show can be selected from such, and the selected show is then used to instantiate a popup.
- Popup - Called when show is selected from search window. Lists details of the show selected from the Search window, including show description, list of actors/actresses, and the next available showtimes. Users can add the selected show through this window by pressing the 'Add' button, which will immediately close the Popup window. Re-searching the added show will allow the user to remove the show. NextEp is called when this is instantiated also.

Which Form of Incremental testing did you follow?

### Top Down

We started by testing the Main Form, which is the first part of the program to appear. Once the Main Form was functioning, we began testing the Search component. After the Search component passed unit test, we combined the two by testing search with queries from Main Form. Following that, we performed unit tests on nextEp. Then we did unit tests on popup. Afterwards we tested popup using the results of the Search component and the results of nextEp. We unit tested exportSocial and then incrementally tested it in combination with data provided by MainForm. Finally, we also tested Main Form integrating the nextEp component.

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| Module | MainForm |
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| Incremental Testing |
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| Defect # | Description  | Severity | How to correct  |
|----------|--|----------|---|
| 1        | NextEp returned a single Episode instead of a list of upcoming episodes to MainForm. | 1        | Changed NextEp to return a HashMap<String, Date> that correlates each upcoming episode to a date. |
| 2        | Double clicking an   | 2        | Bypass the search   |

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|  | episode in either the shows or times list would bring up a search for the show instead of a direct popup for that show. |  | window and just go directly to the first result and create a popup for it. |
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| Regression Testing |
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| Defect # | Description   | Severity | How to correct   |
|----------|---|----------|--|
| 1        | The dates being collected in NextEp were not very accurate. This caused MainForm to sort them oddly or not receive them at all. | 1        | Changed NextEp to account for hour and minute of upcoming episode air date as well as the day.   |
| 2        | Trying to get the upcoming episodes of a series with no upcoming episodes was causing a crash.                                  | 1        | Surround the date parsing in a try catch that tries to format the date with hour and minute. If it cannot do that, then just to the day. If that doesn't work, return an empty list. |

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| Module | Popup |
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| Incremental Testing |
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| Defect # | Description | Severity | How to correct |
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| 1 | 'Actors' window after double-clicking on the actors list in 'Popup' created another instance of 'Popup' and treating it as the same window instead of a separate window. | 1 | Deleted second 'Popup' constructor and added a new module 'Actors' that is created from 'Popup'. The actors window will still display the information as before (actor/actress name, picture), but it will be easier to make modifications to the actors window without needing to change the 'Popup' module as a whole. |
| 2 | Users cannot add show by double-clicking on available episodes from the list of upcoming times.  | 1 | Added a new MouseListener to the list of times that with implemented behaviors for double-clicking. Once it detects double-clicking, it will add the show to the list in the main window, just as the Add button does.   |

### Regression Testing

| Defect # | Description   | Severity | How to correct  |
|----------|---|----------|---|
| 1        | Subsequent double-clicking on show times will keep adding the same show times on the main window. | 1        | Implemented a conditional check identical to the one implemented in the ActionListener event for the Add button. Basically, it will check if the show |

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|   |   |   | has already been added to the main list before adding. In other words, double-clicking on a show time again will remove the show the user has just added.                        |
| 2 | Double-clicking on times to add/remove shows does not change the button text. For instance, if user double-clicks a show time to add a show, the button text will NOT change to 'Remove'. | 1 | Added additional behaviors in MouseListener for double-clicking that will change the text of the JButton object for adding/removing shows when users double-click on show times. |

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| Module | Search |
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| Incremental Testing |
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| Defect # | Description  | Severity | How to correct  |
|----------|--|----------|---|
| 1        | Double-clicking on a selected show in the Search window was not allowing the user to proceed to the selected show information. | 1        | Added a MouseListener to the shows list and implemented behaviors for double-clicking on the show. Doing so will open up the show information in the Popup module, just the same as it would by clicking on the 'Details' button. |

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| Regression Testing |
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| Defect # | Description   | Severity | How to correct  |
|----------|---|----------|---|
| 1        | The mouseClicked event where double-clicking is implemented has no error-checking in case connection has been lost when trying to access a selected show. | 1        | Implemented a try-catch block where the Popup object is being created. Nearly identical to the try-catch implemented in ActionListener. If connection was lost while trying to access the selected show, the program will display an error message box. |

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| Module | exportSocial |
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| Incremental Testing |
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| Defect # | Description  | Severity | How to correct   |
|----------|--|----------|--|
| 1        | Exporting to Facebook would just open show on TVDB and not actually post to Facebook | 1        | Implemented Facebook sharer URL formatting interface to submit to post to Facebook |

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| Regression Testing |
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| Defect # | Description  | Severity | How to correct   |
|----------|--|----------|--|
| 1        | Link opened in browser would just bring up Facebook post dialog and not have a link to show. | 1        | Appended show URL on TVDB to URL that was being opened |

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| Module | nextEp |
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| Incremental Testing |
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| Defect # | Description   | Severity | How to correct  |
|----------|---|----------|---|
| 1        | nextEp grabbed "TBA" as next episodes instead of ignoring them. | 1        | Made nextEp ignore "TBA" and only grab official upcoming episodes |

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| Regression Testing |
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| Defect # | Description   | Severity | How to correct  |
|----------|---|----------|---|
| 1        | Showed no upcoming episode after grabbing multiple upcoming episodes. | 2        | Fixed loop to stop after reaching end of upcoming episodes, and added code to |

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|  |  |  | tell if no upcoming episode better. |
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| Module | exportiCal |
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| Incremental Testing |
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| Defect # | Description  | Severity | How to correct   |
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| 1        | couldn't use the format of the date and time that was used in Main | 1        | instead of building the Calendar object by hand I used setTime to set the date of the calendar |

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| Regression Testing |
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| Defect # | Description   | Severity | How to correct  |
|----------|---|----------|---|
| 1        | couldn't set the end time of the event                        | 1        | used to add() function to increment the hour of the event by one  |
| 2        | start time and the end time were the same (both the end time) | 1        | instead of setting endDate to startDate I created endDate and initialized it the same way I initialized startDate and then used add() |