**Software Requirements Specification**

**Version 1.3**

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**Student Calendar Integration Application**

**BYU-Idaho CS364 Software Engineering**

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**1.0 Introduction**

**1.1 Purpose**

The purpose of this document is to provide a detailed description of the Student Calendar Integration. It will explain the project's features, target audience and hardware and software requirements. This document is intended for both the stakeholders and developers of the system.

**1.2 Scope of Project**

The scope of this project will be the creation of a multi-platform calendar program. The program will be capable of interfacing with the BYU-I I-Learn system. In addition to the features and functionality of a standard calendar program, this program will allow BYU-I students to create events, reminders, or to do lists based off due dates from their I-Learn page. For a more detailed explanation of individual program features see section 2.2.

**1.3 Intended Audience**

This document is intended for project managers, team leaders, writers, developers, testers, users, and any other individual interested in the design and development of the Student Calendar application.

Reading this document in the order it has been presented is highly recommended for most readers. Careful attention to the glossary and overview of document sections is key to avoid unnecessary confusion. The glossary contains keywords, terms, and abbreviations used throughout the document. The overview of document section provides a concise description of the main sections of the document.

**1.4 Glossary**

| **Keywords** | **Definition** |
| --- | --- |
| API | A set of functions and procedures that allow the creation of applications which access the features or data of an operating system, application, or other service. |
| BYU-I I-Learn | Website that the project will interact with and read user's calendar. |
| Calendar program | A computer program that operates a schedule of events. |
| Calendar location | An address or place that is associated with an event. |
| Developers | Teams of students of Brigham Young University - Idaho. |
| Event | Any assignment the user declares in a specific time-frame in the calendar. |
| Group | Two or more users who are separated from other users and possess each other's contact information. |
| I-Learn | Brigham Young University – Idaho's website for online students. |
| I-Learn account | An online student's account on I-Learn. |
| LDAP | (Lightweight Directory Access Protocol) is a software protocol for enabling anyone to locate organizations, individuals, and other resources on a corporate internet or public internet. |
| Link | A link (short for hyperlink) is an HTML object that allows you to jump to a new location when you click or tap it. |
| Mobile User | A user using the program on their mobile device. |
| Project Manager | The team member who oversees the project and works with the team leads to make sure the project fulfills the necessary requirements and is finished on time. |
| Stakeholder | Any person who has an interest in our project, typically fellow college students and friends of developers. |
| Student Calendar Integration | Application intended to fulfill requirements. |
| Reader | All users, developers, and stakeholders will be viewing the site. |
| Software Requirements Specification | Also known as SRS in this document. A document that contains the requirements a product must meet in order to succeed. |
| SSO | Single sign-on is an authentication process that allows a user to access multiple applications with one set of login credentials. |
| Third Party Technology | A provider of outsourced logistics. examples: Google-Hangouts, Zoom |
| Toggle | To switch from one effect, feature, or state to another. |
| Tutorial | Self-paced instructional material that provides step by step information in presenting a concept or learning unit. Computer based tutorials use interactive methods such as hyperlinks, and audio and visual presentation of the subject matter, and provide feedback through question-answer exercises. |
| User | Students that attended Brigham Young University - Idaho. |

**1.5 References**

[1] D. Zowghil & C. Coulin, "Requirements Elicitation: A Survey of Techniques, Approaches, and Tools" Engineering and Managing Software Requirements, pp. 19-46, 2005 [Online] Available: <http://link.springer.com/chapter/10.1007%2F3-540-28244-0_2#page-1>

**1.6 Overview of Document**

This document is broken out into multiple sections and each section covers different topics related to the overall design and specification of this application. Section 1.0 of this document covers the introduction and highlevel outline for the document. Section 2.0 provides an overview of the application that will be implemented where as section 3.0 begins the deeper technical specifications and functionality of the application. Section 4.0 of the document will cover the validation of the functional requirements.

The main section of the SRS portion of the document will be seciton 3.2. This section does a deeper dive into each feature and use case specification that makes up the application as a whole. To help reduce confusion on how this works we have provided below a template or example of what each feature and use case may look like. This template provides quick and easy bullet style details about each feature and use case that creates that particular feature.

Each feature will contain a feature name / title followed by a description of the feature. This will then be followed by a use case or user story which defines a key functional aspect of the specified feature. See below on how the table breaks apart the indivudal feature in the specified use case.

In the table below the definition is on the right of the words on the left.

Define the words on the left in more details.

**3.2.x Feature Template Example**

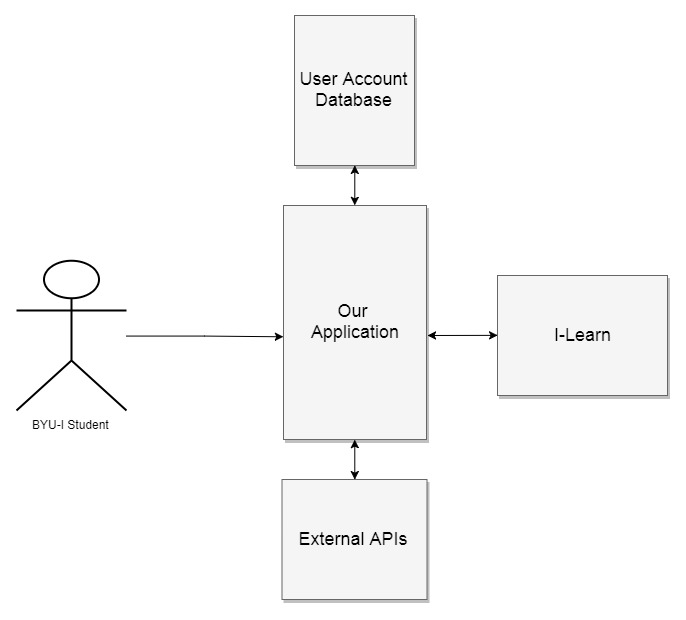
Full Feature Description. What the feature is. Who is going to use it. Why is this feature needed or wanted.

**3.2.x.y Use Case Name Example**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | The use case detail outlines the What, Who, Why of the use case. Example: As a User, I want to xxxxx because I am looking for an easier way to do my task. |
| XRef | This is short for Cross Reference and links to different sections of the document. For example you may have a reference to a genearal diagram above in section 2.0. You should also have a reference to the validation section of the document that covers the verifiable portions of the use case functionality. Lastly, when the SDD portion of the document is created a link to that section will then be found here. |
| Trigger | User, application, or external driven behavior events that happen based on automated or user input. |
| Precondition | Represents the conditions, visually, data, logic, or other things that must exist prior to this feature or use case being able to be executed, used, or seen. |
| Basic Path | This is the path on how the user gets to this feature or use case. How did I get here? |
| Alternate Path | There are often alternate ways to get to this feature or use case. "I used the help / search feature". |
| Post Condition | What happens when the user or process is triggered. What states exist afterward. |
| Exception Paths | In what cases are there exceptions to how or what something should or should not be doing. This is to be communicated as inclusive ideas. |
| Other | This is for anything that was not covered in the previous table descriptions and in most cases will not contain details. |

**2.0 Overall Description**

**2.1 Product Perspective**

The Student Calendar can be used as a stand-alone application that gives students much of the functionality as described in the product functions section. For BYU-I students, the calendar's main benefits come from interfacing with the University's I-Learn system allowing them to access assignments and other events. Interfaces to other external systems will provide further functionality outside of basic calendar tasks. Detailed descriptions of these external systems are beyond the scope of this document. All interfacing with external systems will be done according to industry standards.  
[](https://github.com/MCLifeLeader/CS364/blob/master/Final%20Document/Images/Product%20perspective.jpg)

**2.2 Product Features**

Features have been broken down into various feature categories to group like or related features together.

**2.2.1 - User Interface**

**2.2.1.1 - The application shall be mobile aware and responsive in its design.**

**2.2.1.2 - The application shall have a rich web page design available through a full web browser.**

**2.2.1.3 - The application shall have app support for android and iOS with an interface similar to the web application.**

**2.2.2 - Security Features**

**2.2.2.1 - The application shall support SSO authentication**

**2.2.2.2 - The application shall support non-SSO authentication**

**2.2.2.3 - The application shall support Active Directory and LDAP validation**

**2.2.3 - Software Interfaces**

**2.2.3.1 - The application shall interface with BYU-Idaho's I-Learn web service**

**2.2.4 - Notification Features**

**2.2.4.1 - The application shall notify users of invites from other users**

**2.2.4.2 - The application shall notify users of upcoming due dates**

**2.3 User Classes and Characteristics**

**2.3.1 - Students: The majority of users will be students during the school year. The application will be simple enough that students from all technical backgrounds can easily navigate the interface.**

**2.3.2 - Professors: There will be some features that professors may want to access. The interface will be simple enough to accommodate all technical backgrounds.**

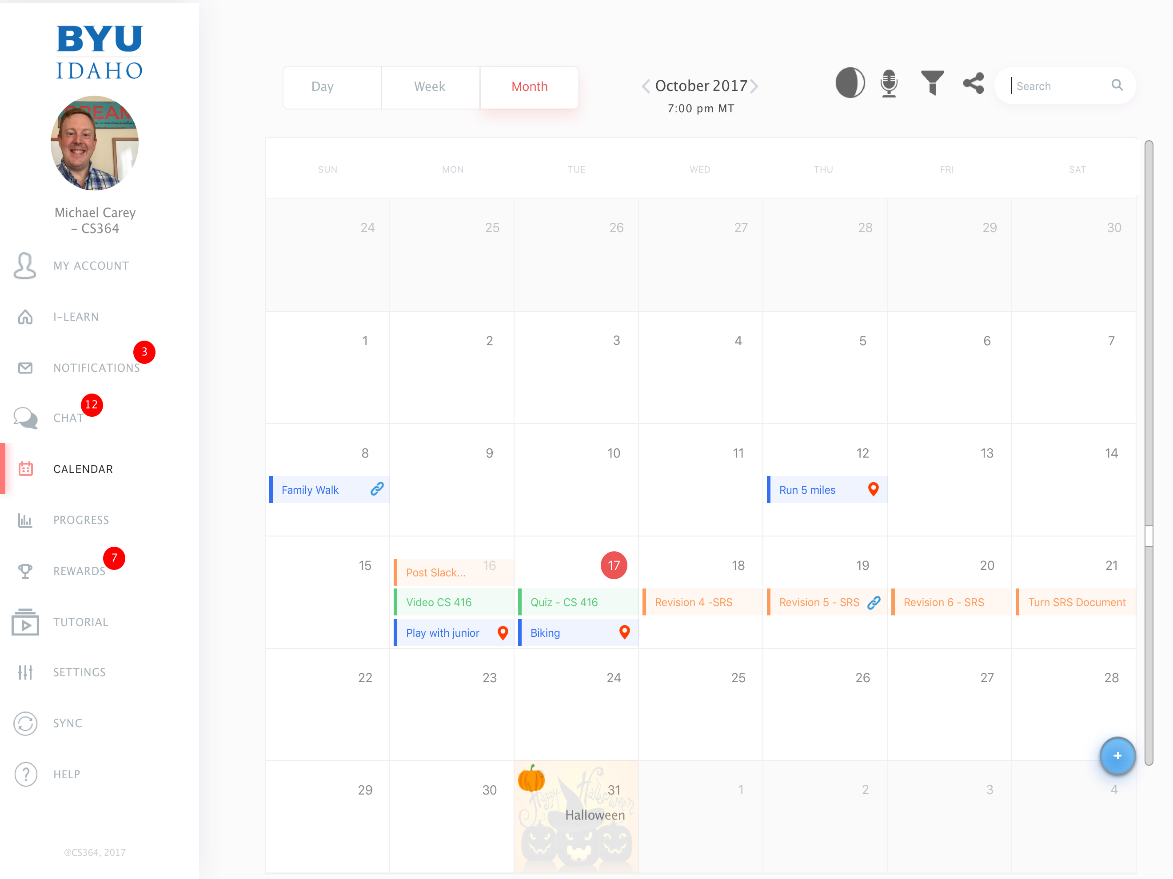
**2.3.3 - ITS Staff: The ITS Staff will maintain the application and keep it updated. The ITS Staff will have a sufficient technical background to perform all maintenance duties.**

**2.4 Operating Environment**

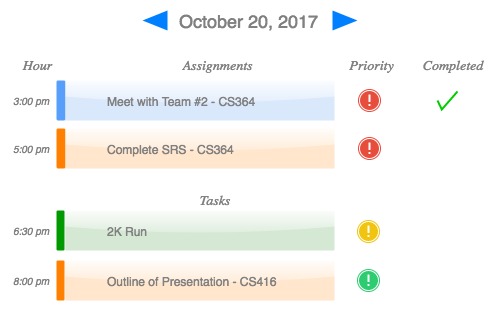
The software being developed will run as a web application on all web browsers and on most devices.

**2.5 Image References**

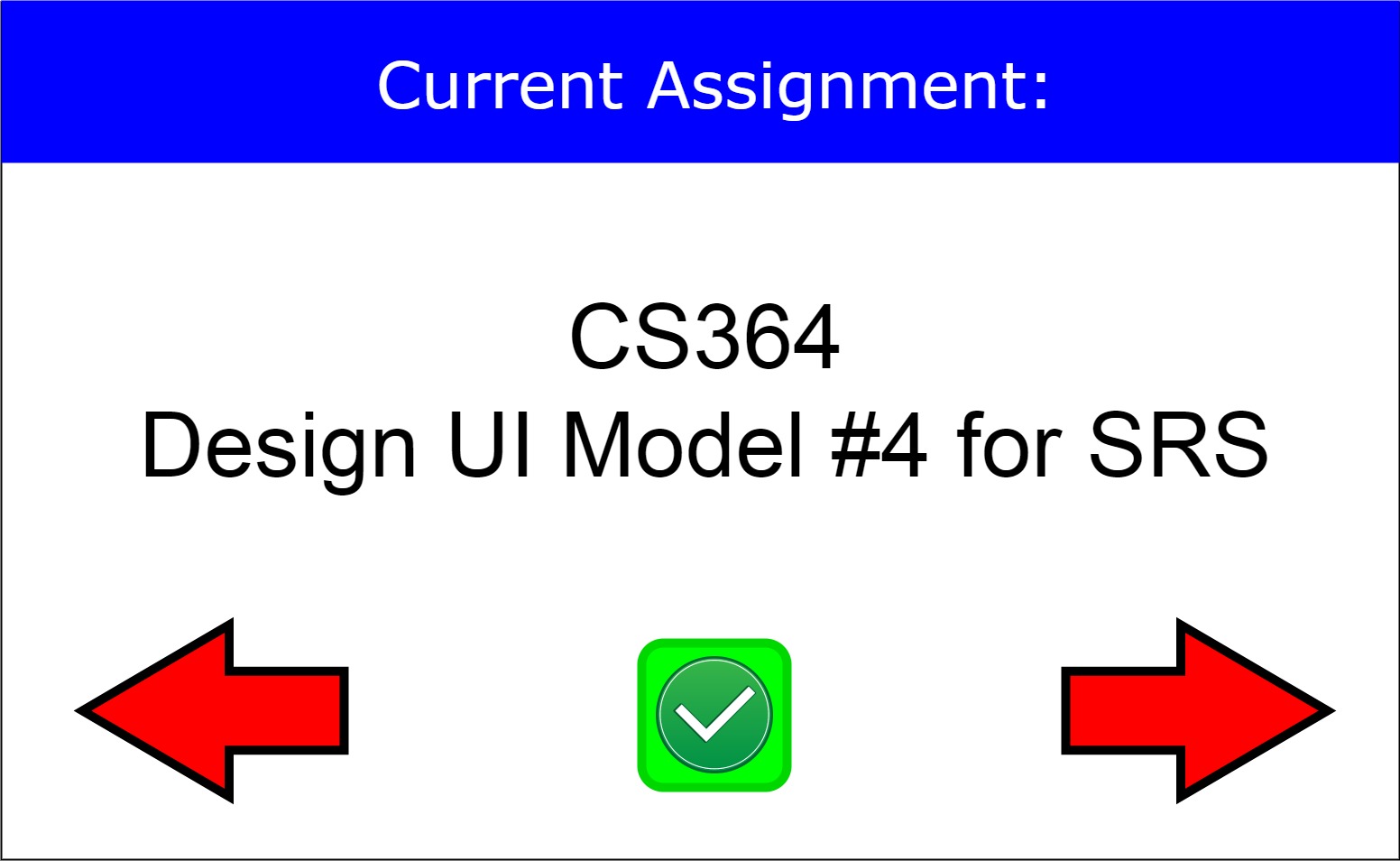
**2.5.1 - Main Calendar View:**

[](https://github.com/MCLifeLeader/CS364/blob/master/Final%20Document/Images/Main_Calendar_View_Remastered.png)

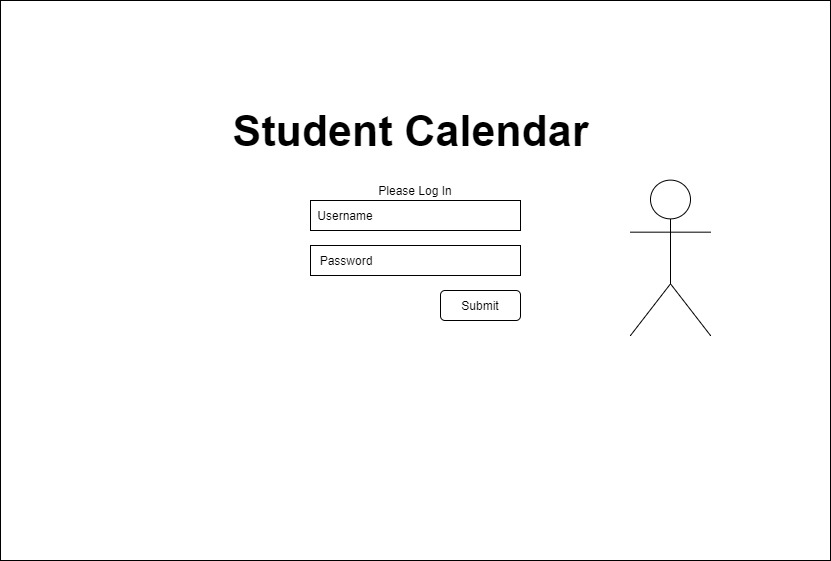
**2.5.2 - Assignment Priority List View:**

[](https://github.com/MCLifeLeader/CS364/blob/master/Final%20Document/Images/3.2.004.0_Diagram_attempt2.jpg)

**2.5.3 - Simplified "To-Do" List View:**

[](https://github.com/MCLifeLeader/CS364/blob/master/Final%20Document/Images/Simplified%20to%20do%20list.jpg)

**2.5.4 - Login Page View:**

[](https://github.com/MCLifeLeader/CS364/blob/master/Final%20Document/Images/Login-Page.jpg)

**2.6 Technical Requirements**

**2.6.1 - Will require a Database, probably with Oracle or Firebase**

**2.6.2 - Coding practices will follow common coding standards**

**2.6.3 - Will need system permissions (ex: camera) for some requirements**

**2.6.4 - Access and link with BYU-I I-Learn**

**2.7 User Documentation**

When a user creates an account with the Student Calendar application, a video tutorial will be the first thing that they encounter in the application. This tutorial will quickly run the user through the most important features to get started on using the calendar. Additionally there will be separate tutorials on the other features not covered in the initial tutorial that the user can look at when they need some extra help.

**2.8 Assumptions and Dependencies**

**2.8.1 - Assumptions**

**2.8.1.1 Assumption 1**

An assumption made is that the devices that access the application will have the requisite hardware resources to properly access the content.

**2.8.1.2 Assumption 2**

The student calendar requirements highlight optional features that are not critical to the function of the application. They consist of various improvements to usability and convenience and may or may not be added after the development of the core features based on the discretion of the stakeholders.

**2.8.1.3 Assumption 3**

Concerning the security of the application API, it is assumed that the necessary identification and authentication is in place for users who wish to access the API.

**2.8.1.4 Assumption 4**

In order for the calendar application to comply with the Americans with Disabilities Act any device using the speech recognition and speech to text features of the application are assumed to have the hardware and software capabilities to do so.

**2.8.1.5 Assumption 5**

It is assumed that the messaging feature, including text messages, will incorporate PHP's mail function and a list of mobile carrier's email servers to function.

**2.8.1.6 Assumption 6**

It is assumed that the calendar application will adhere to FERPA law in the same manner that I-Learn does for the protection and privacy of student education records.

**2.8.1.7 Assumption 7**

For the purpose of setting time zones for the calendar application it is assumed that the application's time zone will use the device's current time zone setting.

**2.8.1.8 Assumption 8**

There is an assumption that the active student directory will be used simply for look-up and then contacting of students. LDAP is relatively slower with add, delete, and update, but quicker through simple reads or queries.

**2.8.1.9 Assumption 9**

The Student Calendar App assumes the student is a student at Brigham Young University - Idaho who uses I-Learn 3.0.

**2.8.1.10 Assumption 10**

It is assumed that the student is in possession of their Brigham Young University - Idaho username and password in order to gain access to the application.

**2.8.1.11 Assumption 11**

It is assumed that the student is using the application on a device that supports color in order to view certain features.

**2.8.2 - Dependencies**

**2.8.2.1 Dependency 1**

Some of the application's features are dependent on hardware components that are more commonly found in mobile handsets. For example, the video calling integration would depend on a physical camera and the travel-time indicator will benefit from the inclusion of a GPS antenna.

**2.8.2.2 Dependency 2**

Several features in this document will depend wholly on the existence and maintenance of various APIs.

**2.8.2.3 Dependency 3**

The application will depend on mobile devices which will include the necessary mobile internet browsers (i.e. Chrome, Safari) to accommodate the mobile form factor of the application in those environments.

**2.8.2.4 Dependency 4**

The incorporation and usability of the calendar application API depends on runnable code contained within documentation to help and encourage developers to add functionality and interactivity.

**2.8.2.5 Dependency 5**

Successful syncing of the application with BYU-Idaho's I-Learn is dependent on a user's ability to login as a currently admitted student and the condition of the user's current enrollment in the classes they wish to sync.

**2.8.2.6 Dependency 6**

Uploading of images will depend on the functionality of Google's Cloud Vision API to detect inappropriate content. Requests to bypass this filtering must be resolved with a site administrator.

**2.8.2.7 Dependency 7**

Push notifications will rely on Google Cloud Messaging for Chrome and Android users. They will rely on Apple Push Notification service for macOS and iOS devices.

**2.8.2.8 Dependency 8**

The Student Calendar Application requires the student be an active enrolled student at Brigham Young University - Idaho.

**2.8.2.9 Dependency 9**

The Student Calendar Application replies upon the Facebook, Google Plus, and Twitter services for sharing students calendar information.

**3.0 Requirements Specification**

**3.1 External Interface Requirements**

We have a number of external services and COTS applications that will be integrated into our application.

**3.1.1 External System 1**

**3.1.2 External System 2**

**3.2 Functional Requirements**

This section represents the list of functional requirements and use cases that define each of the various features within the system. Each feature will contain a short description and a detailed list of functional requirements.

**3.2.1 Calendar Application is Mobile**

The calendar application will be usable and readable in mobile form factors. It will allow easy access from a mobile application to the user's school calendar.

**3.2.1.1 Smartphone Application**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to be able to access the calendar from my mobile device |
| XRef |  |
| Trigger | The user opens the calendar app on their smart phone. |
| Precondition | The user must have the app installed. |
| Basic Path |  The user opens the calendar app on their smart phone.   The app displays the users upcoming items. |
| Alternate Path | None |
| Post Condition | The calendar app opens and displays the user's assignments. |
| Exception Paths | The app can be closed at any time. |
| Other | None |

**3.2.2 Calendar Application is Web**

The calendar application will have a responsive design capable of displaying on any web browser and screen. The user will be able to access the calendar application from anywhere that has a web browser.

**3.2.2.1 Access From Web Browser**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to access the application from any web browser. |
| XRef | Verification: 4.2.2.1 |
| Trigger | The user navigates to the calendar application's URL on a web browser. |
| Precondition | The user has a web browser available. |
| Basic Path |  The user navigates to the calendar application's URL on a web browser   The app displays the users upcoming items. |
| Alternate Path | None |
| Post Condition | The calendar app opens on the user's web browser. |
| Exception Paths | The user may abandon this task at any time. |
| Other | None |

**3.2.3 Calendar Application API**

This application will allow users to write plugins that integrate with the calendar application. This will enable users to expand the capabilities of the calendar application to fit their needs.

**3.2.3.1 Add a Plugin**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to add extra capabilities to the calendar application |
| XRef |  |
| Trigger | The user has written or downloaded a plugin for the app and will add it to the calendar. |
| Precondition | The user has a compatible plugin for the app. |
| Basic Path |  The user installs the plugin to the calendar.   The user opens the calendar app. |
| Alternate Path | The plugin is not compatible and the system notifies the user. |
| Post Condition | The plugin makes changes to the app. |
| Exception Paths | As long as the plugin is not installed the attempt can be abandoned at any time. |
| Other | None |

**3.2.4 Priority List**

Students need to prioritize tasks and assignments so they can focus on the most important tasks. This feature will help students plan ahead by listing assignments and tasks ranked by their due-date and priority level (High, Medium, Low).

**3.2.4.1 Assignment Priority List**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a student, I want to be able to see I-Learn assignments ordered by due-date and priority label. |
| XRef |  |
| Trigger | The user opens the calendar app. |
| Precondition | The system has access to the user's assignments on I-Learn. |
| Basic Path | 1. The user taps on the monthly view of the calendar. 2. The user taps on a specific day and sees a list of assignments sorted by due date and level of priority. 3. The user can click on each assignment see the corresponding information if available. |
| Alternate Path | If the user has not added a level of priority, then the system will only display the list according to the corresponding due-dates for each assignment. Otherwise, the user can assign a level of priority by tapping on the assignment and then choosing "prioritize." |
| Post Condition | The user sees a list of time sensitive and prioritized assignments. |
| Exception Paths | The user can cancel this process at any time. |
| Other | None |

**3.2.4.2 Task Priority Labels**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a student, I want to be able to prioritize tasks and assignments to improve my work quality and get urgent work done in a timely manner. |
| XRef |  |
| Trigger | The user opens the calendar app. |
| Precondition | The user has added custom tasks previously. |
| Basic Path | 1. The user taps on the monthly view of the calendar. 2. The user taps on a specific day and sees a list of assignments sorted by due date and a list of tasks (if any) labeled: high, medium, and low priority.  3. The user can click on each assignment or task and see the corresponding information if available. |
| Alternate Path | If the user has not added custom tasks, then: 1. The user taps on "add task" on the main calendar view. 2. The user adds the task and then sets a priority level: high, medium, or low. 3. The user sets a time as deadline for the completion of the task. |
| Post Condition | The user sees a list of time sensitive assignments and tasks. |
| Exception Paths | The user can cancel this process at any time. |
| Other | None |

**3.2.5 ADA Compliant**

The Americans with Disabilities Act (ADA) has standards for all electronic and information technology to be accessible to people with disabilities. Students may have disabilities that can prevent them from using this application as intended. The purpose of this feature is to help all those students that can't perform general software usage functions such as clicking, tapping, or reading instructions. This feature is intended to diminish the difficulties that students with disabilities may face when attempting to use the software.

**3.2.5.1 Speech Recognition**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a student with disabilities, I would like to speak to the application so that I can add tasks to the calendar. |
| XRef |  |
| Trigger | The user opens the application by saying out loud: "Open BYI-I Calendar." |
| Precondition | With the help of a family member or school official, the student's account was set up to apply ADA settings when using the application. |
| Basic Path | 1. After opening the app, the user says out loud: "Add task". 2. The system responds by saying: "What is the new task?" 3. The user says the name of the task to which the system prompts the user for the month, day, year, and priority level.  4. The system adds the information to the calendar and finalizes the interaction by saying: "Your task has been added, would you like to add another task?" 5. If the user wants to add another task, then the process starts all over. |
| Alternate Path | None. |
| Post Condition | The task is added to the calendar through speech recognition. |
| Exception Paths | The user can cancel the process at any time by saying "Cancel process" out loud. |
| Other | None. |

**3.2.5.2 Auto Reading**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a student with disabilities, I would like the application to read me the calendar assignments and tasks. |
| XRef |  |
| Trigger | The user opens the application by saying out loud: "Open BYI-I Calendar." |
| Precondition | With the help of a family member or school official, the student's account was set up to apply ADA settings when using the application. |
| Basic Path | 1. After opening the app, the user says out loud: "Read assignments". 2. The system responds by saying: "Would you like me to read all the assignments and tasks due today, this week, or this month?" 3. The user chooses one of the prompted options: today, this week, or this month.  4. The system reads the assignments according the user's choice. The system finalizes the interaction by saying: "Would you like me to read your tasks and assignments again?" 5. If the user says "No" then the systems says: "Ok," if the user says "Yes," then the process will be repeated from step 2. |
| Alternate Path | None. |
| Post Condition | The system reads all the assignments and tasks according to the specifications given by the user. |
| Exception Paths | The user can cancel the process at any time by saying "Cancel process" out loud. |
| Other | None. |

**3.2.6 Export/Import**

The Calendar application will sync with I-Learn's calendar so that all class assignments are added automatically to the application. This is a very important feature because it keeps the user from manually adding all the assignments.

**3.2.6.1 I-Learn Import**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want the app to automatically download all the assignments listed on I-Learn for each specific task. |
| XRef |  |
| Trigger | The user taps on the import button. |
| Precondition | The user has access to another calendar to import from. |
| Basic Path | 1. The User selects to import calendar items from the other calendar application. 2. Once the import is complete the calendar will update to show all added items. |
| Alternate Path | 1. If the import fails, the user will be notified. |
| Post Condition | The calendar app will update and show new activities. |
| Exception Paths | The User may cancel the operation any time before the items have been transferred. |
| Other | None |

**3.2.6.2 Export**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to export my calendar data to other calendars of my choosing, such as Google Calendar or Outlook. |
| Xref |  |
| Trigger | User presses the export calendar button. |
| Precondition | The User has a compatible calendar to export to. |
| Basic Path | 1. After the User presses the export button they will be prompted for a calendar to export to. 2. After the new calendar is selected the system will export the selected items to the new calendar. |
| Alternate Path | If the new calendar is not compatible with the export the User will be notified. |
| Post Condition | The new calendar will gain the items from the old calendar. |
| Exception Paths | The user may cancel the operation any time before the items have been transferred. |
| Other | None |

**3.2.7 Reminders**

Within the application, the user should be able to set reminders for assignments and events. The user can choose to have these reminder alerts occur at several different time intervals before the assignment/event is due.

**3.2.7.1 The user often forgets about assignments**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to be alerted before an assignment is due in case I have forgotten to turn in the assignment. |
| XRef |  |
| Trigger | The user selects the bell icon on an activity to add a reminder. |
| Precondition | The user has accessed the calendar app's main screen, and events or assignments are displayed. |
| Basic Path | 1. The user logs into I-Learn through the app. 2. The users taps on an event or assignment. 3. The user taps the 'bell' icon. 4. The user sets the settings for the given reminder. |
| Alternate Paths | In step 2 the user can go to settings and turn on reminders for all assignments. |
| Post Condition | The user can edit the reminder by tapping on the 'bell' icon again. |
| Exception Paths | If the user does not have any events, they will not be able to create any reminders. |
| Other | The reminder information includes time, reason, and notification type. |

**3.2.8 Links**

The application will be able to accept several different types of links as input for events, assignments, or messages. The link could be anything from a website URL to a phone number.

**3.2.8.1 The users group uses outside resources like google docs.**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to be able to link to different web pages, addresses, phone numbers, or applications that will help me and my group complete our assignments. |
| XRef |  |
| Trigger | User taps on a link in a calendat item. |
| Precondition | The user is on the calendar page, and is viewing an event or assignment. |
| Basic Path | 1. The user logs into I-Learn through the app. 2. The users taps on an event or assignment. 3. The user taps on a link. 4. The application will automatically take them to the website, address, or application. |
| Alternate Path | 3. the link type could be a phone number and a call would begin when tapped. |
| Post Condition | The user is taken to the destination of the link, the link turns purple signifying it has been tapped before. |
| Exception Paths | If the link is invalid, the user is displayed an error message |
| Other | None |

**3.2.9.1 The user wants to upload a photo to clarify their message**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a student, I want to be able to upload photos to my assignments or discussion threads to provide more detail on various subjects. |
| XRef |  |
| Trigger | The user selects the photo button on an event or thread. |
| Precondition | The user has a photo to import from their phone and has given permission for the app to use their local media. |
| Basic Path | 1. The user logs into I-Learn through the app. 2. The users taps on an event, assignment, or thread. 3. The user taps the 'photo' button. 4. The user give the app permission to access device's photos or camera (happens once). 5. The user selects or take the desired photo to upload. |
| Alternate Path | Step 3. The user could also choose to take a photo instead of upload one. |
| Post Condition | The event or message will update and show the user's photo. |
| Exception Paths | The user does not allow access to their camera role or camera. |
| Other | None |

**3.2.10 Collapsible Calendar**

When the user views the Calendar, each day will contain a list of events for that given day. At first, only one event is shown, but the user can choose to show all of them by tapping a button labeled 'Show all'.

**3.2.10.1 Calendar list of events extended.**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a mobile user, I want to be able to expand or condense a list of events to fit my small screen. |
| XRef | Validation for this feature can be found at 4.2.10. |
| Trigger | A user taps on the 'Show all' event button for one day. |
| Precondition | The user has already logged into the app with their Ilearn accounts and is viewing the calendar page. |
| Basic Path | 1. The user logs into I-Learn through app. 2. The user taps the 'calendar' icon. 3. The user taps a 'See all' button on one day in the calendar. 4. The list of events for that day is expanded. |
| Alternate Path | None. |
| Post Condition | If the button is tapped again, the list of events collapses to save screen space. |
| Exception Paths | If there is nothing to show for that day, the user's calendar will not have the 'Show all' button. |
| Other | None. |

**3.2.11 Group Communication 1: message chat**

When a user has joined a group on the app, they will want to be in contact with their group members through text or email. The app will provide this information upon request and load it into the appropriate messaging app.

**3.2.11.1 Group Message Chat**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a classmate, I want to be able to text members of my study group. |
| XRef | Validation for this feature can be found at 4.2.11. |
| Trigger | A user taps the 'Contact' button on a member of a group from a list. |
| Precondition | User has been accepted into a group. |
| Basic Path | 1. The user taps a button labeled 'Groups'. 2. User navigates through the list of group members and taps on one they want to text. 3. App switches over to default messaging app with group member's phone number. |
| Alternate Path | If the group member the user has selected has not provided a phone number, then the default email app will load with the email. |
| Post Condition | The user is in contact with his/her group. |
| Exception Paths | If the group member the user has selected has not provided a phone number or an email, the app will display a message stating such. |
| Other | None. |

**3.2.12 Group Communication 2: Video Chat**

With the press of a single button, a user can start a video conference call with their group from the app. The app will utilize Skype or Google Hangouts to perform the task for the user.

**3.2.12.1 Video Chat**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to easily start a video call with fellow group members from the app. |
| XRef | Validation for this feature can be found at 4.2.12. |
| Trigger | A user clicks on the Group Video Chat button. |
| Precondition | The user is accepted into a group. |
| Basic Path | The user taps the 'Groups' button. 2. The user taps the 'Group video chat' button. 3. A 3rd party video app, such as Skype or Google Hangouts, is started with all members of the group invited to join a video conference call. |
| Alternate Path | None. |
| Post Condition | The user is in a Group Video Chat session. |
| Exception Paths | If members of the group have not provided the necessary information for the app to contact them, an error is displayed stating so. |
| Other | Every user who uses the app will need to provide their Gmail or Skype names so this feature works properly. |

**3.2.13 FERPA compliant**

The Family Educational Rights and Privacy Act (FERPA) is a Federal law designed to protect the privacy of student education records. In order for our app to conform to federal law, out app must meet certain standards.

**3.2.13.1 Be FERPA compliant**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | This app will maintain FERPA compliance at all times. |
| XRef |  |
| Trigger | Any time the app us used FERPA rules will be met. |
| Precondition |  |
| Basic Path |  |
| Alternate Path |  |
| Post Condition |  |
| Exception Paths |  |
| Other |  |

**3.2.14 Discussion Board Integration**

This feature allows access to the I-Learn discussion boards through the calendar app. It's a quick way to keep up to date on class and group discussions, and make quick feedback.

**3.2.14.1 View discussion board**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | View posts in the discussion boards on I-Learn. |
| XRef |  |
| Trigger |  |
| Precondition | The app must have an internet connection, and be connected to I-Learn. |
| Basic Path |  The user will navigate to one of their classes.   The user will select a discussion board to view. |
| Alternate Path |  |
| Post Condition |  |
| Exception Paths | The user has no classes, or no open discussions available to them. |
| Other |  |

**3.2.14.2 Post to discussion board**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | Make new posts in the discussion boards on I-Learn. |
| XRef |  |
| Trigger |  |
| Precondition | The app must have an internet connection, and be connected to I-Learn. |
| Basic Path |  The user will navigate to one of their classes.   The user will select a discussion board to view.   The user will press the reply, or start new thread button to create a new post. |
| Alternate Path |  |
| Post Condition |  |
| Exception Paths | The user has no classes, or no open discussions available to them. |
| Other |  |

**3.2.15 Time Clock**

This app allows the user to pick a time zone so all timestamps from I-Learn will be converted to the user's time zone for ease of use and minimal confusion.

**3.2.15.1 Set time zone**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | Set the time zone |
| XRef | Validation for this Feature is located at 4.2.15 |
| Trigger | Every time the app recieves a timestamp from I-Learn, it is automatically converted to the users prefered time zone. |
| Precondition | None. |
| Basic Path | 1. Enter the app settings. 2. Enter the time and date settings. 3. Select the time zone setting and select time zone. |
| Alternate Path | None. |
| Post Condition | All timestamps are converted to reflect the user's timezone. |
| Exception Paths | None. |
| Other | None. |

**3.2.16 Recurring Appointments**

A user can setup recurring appointments and events in the calender for multiple days.

**3.2.16.1 User defines an appointment to repeat a certain number of times.**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to set up appointments so they recur every day, week, or month, and receive reminders for them. |
| XRef | Validation for this feature can be found at 4.2.16. |
| Trigger | User selects a day, creates an event, and defines the recurring times for the event. |
| Precondition | User has logged into the app with their Ilearn account and synced their calendar. |
| Basic Path | 1. User accesses the calender. 2. User taps a day in the calender and creates an event. 3. User defines the number of times the event repeats. |
| Alternate Path | None. |
| Post Condition | None. |
| Exception Paths | None. |
| Other | None. |

**3.2.17 Grades**

When an assignment is graded by the user's instructor, the user will see the grade of the assignment on the assignment calender item.

**3.2.17.1 Scores in every assignments and overall grades**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a student, I want to see the grade I got on assignments after I complete them. |
| XRef | Validation for this feature can be found at 4.2.17. |
| Trigger | Every time that an assignment is graded. |
| Precondition | Completed assignments are graded by user's instructor. |
| Basic Path | 1. User completes and submits an assignment. 2. user's instructor grades the assignment. 3. User navigates to the calender. |
| Alternate Path | None. |
| Post Condition | None. |
| Exception Paths | No assignments have been submitted for grading. |
| Other | None. |

**3.2.18 Widget**

The app will support the Android Widget feature. This widget will allow for easy and quick access to the app at all times.

**3.2.18.1 Widget support for Android**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a mobile user, I want to have constant and immediate access to the app through a Widget. |
| XRef | Validation for this feature can be found at 4.2.18. |
| Trigger | Setup by the user on Android. |
| Precondition | App is installed on an Android device. |
| Basic Path | 1. User installs the app on their Android device. 2. In the Android app screen menu, the user navigates to the Widgets menu. 3. User selects the Widget for the app. |
| Alternate Path | None. |
| Post Condition | None. |
| Exception Paths | The app is installed on a non-Android device, in which case, support for Widgets is unavailable. |
| Other | None. |

**3.2.19 Active Directory / LDAP**

A directory system which allows the sharing of information between students. Allows for many features like the sharing of contact information or schedules, providing contact methods and meeting planning for groups.

**3.2.19.1 Contact Class Member**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to contact someone else in my class. |
| XRef |  |
| Trigger | The user clicks on the "Email" button found in the student's contact profile |
| Precondition | The user is on the student list of the class page |
| Basic Path |  The user is presented with a list of students sorted alphabetically.   The user selects the student they wish to contact by clicking on the row the student is located.   The user is presented with a dialogue box displaying the available options of communication.   The user selects the "Email" option, which opens the user's default email program with a new message to the student selected. |
| Alternate Path | In step 4, the user may have been presented with a "Phone" or "Text" option. |
| Post Condition | The user is presented with their default email client with a new email to the student selected. |
| Exception Paths | A new view may be selected. |
| Other |  |

**3.2.20 Notification Control**

Settings for how the user wants to be notified by the application. Provides a user options for their personal preference of notification method.

**3.2.20.1 Notifications On/Off**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to turn notification on. |
| XRef |  |
| Trigger | The user clicks the toggle labeled "Notifications" to the on position |
| Precondition | The user is on the settings page. |
| Basic Path |  The user is presented with a list of settings.   The user locates the setting which is labeled "Notifications."   The user clicks the slider next to the "Notifications" label to the right. |
| Alternate Path | The user can toggle the selection to the left to turn notifications off. |
| Post Condition | Notifications are enabled for the user. |
| Exception Paths | The user can navigate to a different view. |
| Other |  |

**3.2.20.2 Notification Method**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to select how I'm notified. |
| XRef |  |
| Trigger | The user clicks the toggle labeled "Alerts." |
| Precondition | The user is on the settings page. |
| Basic Path |  The user is presented with a list of settings.   The user locates the setting which is labeled "Alerts."   The user clicks the slider next to the "Alerts" label to the right. |
| Alternate Path | The user can perform the same function on the "Email" and "Text" settings. |
| Post Condition | The user receives alert notifications through their device's default notification method. |
| Exception Paths | The user can navigate to a different view. |
| Other |  |

**3.2.21 Shared Calendar**

This feature allows the user to select one or more of their calendars, and share them with one other person, or a group of people.

**3.2.21.1 Shared Calendar Group Creation**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | Create a group of people to share one or more calendars with. |
| XRef |  |
| Trigger | The user navigates to Shared Calendar Group Creation section in the settings menu. |
| Precondition | The user must have already created one or more calendars. And have one or more contacts |
| Basic Path | 1. The user will be prompted to select which calendars they want to add. 2. The user will be prompted to select which contacts they want to share with. 3. The user will be asked to confirm their selection. |
| Alternate Path |  |
| Post Condition | The people selected receive a notification, and have the option to view the user's calendar(s). |
| Exception Paths | If the user has not created any calendars. Or if the user has no contacts |
| Other |  |

**3.2.21.2 Send Shared Calendar Update Notification**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | Send an alert to people who you share a calendar with, when you make an update. |
| XRef |  |
| Trigger | The user updates or changes anything on a calendar they share with others. |
| Precondition | The user must have already shared one or more calendars with one or more contacts. |
| Basic Path | 1. The user updates or changes anything on a calendar they share with others. 2. Notifications are automatically sent to contacts that share the changed calendar. |
| Alternate Path |  |
| Post Condition | The people sharing a calendar with the user are notified when changes are made. |
| Exception Paths | If the user is not sharing any calendars |
| Other |  |

**3.2.22 Push Notifications**

This is a notification that will be seen at any time, even if the app is not being actively used.

**3.2.22.1 Receive Push Notification**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to receive push notifications so I can receive up to date info without having the calendar app open at all times. |
| XRef |  |
| Trigger | When the user receives a notifications. |
| Precondition | The user must have notifications enabled. |
| Basic Path |  A notification shows up on the top of the users screen.   The user either selects the notification to view its contents, or dismisses it. |
| Alternate Path |  |
| Post Condition | The notification closes, and the user can return to a prior activity. |
| Exception Paths | The user has disabled notifications. |
| Other |  |

**3.2.23 Invitations**

This Feature allows the user to send an invitation to one or more of their calendar events, to one other person, or a group of people.

**3.2.23.1 Send Event Invitations**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | Users can invite others to events on their calendar. |
| XRef |  |
| Trigger | The user selects event(s), and who to share them with. |
| Precondition | The user must have already created one or more events. |
| Basic Path |  In the settings the user selects "share event(s)".   The user selects the event(s) they want to share.   The user selects the people to share the event(s) with. |
| Alternate Path |  |
| Post Condition | The people selected receive a notification, and have the option to view the user's event(s). |
| Exception Paths | The feature is only available if events exist. |
| Other |  |

**3.2.24 Simplified "To Do" Assignment Display**

The simplified assignment display allows users to view one task as a time to reduce stress and help users focus on the task at hand. The screen will display the title of the assignment, two arrow buttons at the bottom, and a green check mark button centered between the arrows.

**3.2.24.1 Completing an Assignment**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to mark an assignment as complete and remove it from my assignment list. |
| XRef | An image reference for this feature is found at 2.5.3. Validation for this feature is located at 4.2.24. |
| Trigger | The user selects the green check mark button at the bottom of the screen. |
| Precondition | The user is on the simplified display page. |
| Basic Path | 1. The assignment is marked as completed. 2.The assignment is remove from the current list of assignments. |
| Alternate Path | The user may reselect an assignment as incomplete if they need to work on it further. |
| Post Condition | The next assignment in the list is display on the screen. The assignment will be marked as completed on the main calendar. |
| Exception Paths | If the user presses an arrow button and the check mark button at the same time, the path will not be executed and the assignment will not be marked as complete. |
| Other | None |

**3.2.24.2 Navigating through assignments**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to search through the list of assignments to view what is remaining. |
| XRef | An image reference for this feature is found at 2.5.3. Validation for this feature is located at 4.2.24. |
| Trigger | The user selects the right arrow button at the bottom of the screen. |
| Precondition | The user is on the simplified display page. |
| Basic Path | The next assignment in the list is display on screen. |
| Alternate Path | The user may select the left arrow to move to preceding assignments in the list. |
| Post Condition | The corresponding assignment is display on the screen. |
| Exception Paths | If the user presses both arrow buttons at the same time, the path will not be executed and the screen will remain on the current assignment. |
| Other | None |

**3.2.24.3 Adding assignments to the list**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to add class assignments to my to-do list. |
| XRef | An image reference for this feature is found at 2.5.3. Validation for this feature is located at 4.2.24. |
| Trigger | The user selects the "add to my to-do list" button. |
| Precondition | The user is viewing an individual assignment on the individual assignment detail page. |
| Basic Path | The assignment title is added to the end of the list. |
| Alternate Path | The user may insert alternative text for the assignment to be display in the list. |
| Post Condition | The user may now view that assignment in the list. |
| Exception Paths | If the assignment does not have a title, the user will be prompted to enter alternative text. If the user does not enter any text when prompted, an error message is displayed prompting them to try again or cancel. |
| Other | None |

**3.2.25 Continuous Calendar**

Users need to access the different months efficiently. The Calendar app will have a scrollable section where all the months can be accessed. The idea of the continuous calendar is that users will intuitively know that they can scroll to other months, weeks, or days. In the case of a Month view, the last week of the prior month, and the first week of the next month will be added to the current month view as a visual cue that the section is scrollable. Text labels and color backgrounds will help the user identify the month as they scroll.

**3.2.25.1 Continuous Calendar Month View**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to see the last week of the previous month, all the weeks of the current month, and the first week of the following month when using the "Month" view of the calendar. This feature will allow me to access other months by scrolling up or down. |
| XRef |  |
| Trigger | The user clicks or taps on the "Month" option of the calendar. |
| Precondition | By default, the user will see a calendar view by "Week" after login. |
| Basic Path | 1. The user chooses to view the calendar. The choices are by Day, by Week, and by Month. 2. If the user chooses to see the calendar by Month, the application will present a calendar view from the last week of the previous month to the first week of the subsequent month. 3. The application shows all assignments and events added for the month. 4. The user can scroll up or down to see other months. 5. The user selects an assignment or task. 6. The application displays a screen with detailed information about the assignment or task. |
| Alternate Path | In step 1, the user may have already selected a view by "Month" in previous interactions. The next interaction continues to show the view selected previously. Return to step 3. |
| Post Condition | The selected view by "Month" is presented to the user with scrollable capabilities. |
| Exception Paths | The user may choose another view at any time. |
| Other | None. |

**3.2.25.2 Continuous Calendar Month Alternating Background Color**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to distinguish the month I am looking at as I scroll up or down to different months. |
| XRef |  |
| Trigger | The user clicks or taps on the "Month" option of the calendar. |
| Precondition | By default, the user will see a calendar view by "Week" after login. |
| Basic Path | 1. The user picks the "Month" view of the calendar.  2. The application will present a calendar view from the last week of the previous month to the first week of the subsequent month. 3. The application will divide the months by adding darker and lighter background colors so that no month color is the same. 4. The calendar shows all assignments and events added for the month. 5. The user can scroll up or down to see other months and see the background colors alternating to identify the start of a new month. |
| Alternate Path | In step 1, the user may have already selected a view by "Month" in previous interactions. The next interaction continues to show the view selected previously. Return to step 3. |
| Post Condition | The selected view by "Month" is presented to the user with scrollable capabilities. |
| Exception Paths | The user may choose another view at any time. |
| Other | None. |

**3.2.25.3 Continuous Calendar Month Label**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to know which month I am looking at by seeing a label of the month. This label will remain on a header section on top of the Calendar and will change when the user scrolls to a different month. |
| XRef |  |
| Trigger | The user opens the Calendar application and chooses the Month option. |
| Precondition | By default, the user will see a calendar view by "Week" after login. |
| Basic Path | 1. The user picks the "Month" view of the calendar.  2. The application will present a calendar view from the last week of the previous month to the first week of the subsequent month. 3. A label describing the month will be on top of the calendar 4. The label will change as the user scrolls to different months. |
| Alternate Path | In step 1, the user may have already selected a view by Month" in previous interactions. The next interaction continues to show the view selected previously. Return to step 3. |
| Post Condition | The selected view by "Month" is presented to the user and a label will appear on top of the scrollable section. |
| Exception Paths | The user may choose another view at any time. |
| Other | None. |

**3.2.26 Holidays**

Users need to be aware of specific calendar holidays to plan events more effectively. Text labels and watermarked icons denoting each holiday will help the user identify those days at first glance.

**3.2.26.1 Labels for Holidays**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to see a text label on the most common holiday calendar dates - such as Thanksgiving, Christmas, and Easter. The small text label will be placed next to the date. |
| XRef |  |
| Trigger | The user clicks or taps on a calendar view option and sees text labels on calendar holidays. |
| Precondition | By default, the calendar will show text labels for holidays on any calendar view. |
| Basic Path | 1. The user chooses to view the calendar by Day, by Week, and by Month. 2. The user will see a text label on national holidays. |
| Alternate Path | None. |
| Post Condition | The selected view will identify holidays by placing a text label next to the date. |
| Exception Paths | None. |
| Other | None. |

**3.2.26.2 Watermark on Holidays**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to see a watermark depicting the national holiday. This serves as a second description of the holiday. |
| XRef |  |
| Trigger | The user clicks or taps on a calendar view option and sees text labels on calendar holidays. |
| Precondition | By default, the calendar will show text labels for holidays on any calendar view. |
| Basic Path | 1. The user chooses to view the calendar by Month. 2. The user will see a text label on national holidays along with a watermark image depicting the holiday. For example, a Christmas tree would be watermarked into the specific date box. |
| Alternate Path | None. |
| Post Condition | The selected view will identify holidays by showing a watermark image description of the holiday. |
| Exception Paths | The user can select another calendar view other than the Month view. |
| Other | None. |

**3.2.27 Location**

Because users will be able to add details to a task or event, an option to add addresses to a specific event or task will be available to coordinate group meetings or other social gatherings. This feature will help users to conveniently link addresses to events and display a map view of the addresses using user's Map application. The Map application will also be used to display directions to a location.

**3.2.27.1 Event Location**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to add addresses to the group events that I have created. |
| XRef |  |
| Trigger | User clicks or taps on a calendar date. |
| Precondition | By default, the user will be able to tap on a specific date and be taken to a details page showing each event on that day. Each event or task can be tapped to go to a details screen of that event or task. |
| Basic Path | 1. The user taps on a date. 2. A new details screen will show and the user will be allowed to see all the tasks for the day. 3. The user can tap on each task and a new details screen will show for that task or event. 4. The user can edit the event and fill up the "Location" section if an address is necessary for the event or task. 5. The application goes back to the calendar view. |
| Alternate Path | If a task has not been added, then the user can click on a day, add an event, and fill up the details section of the event including the location. |
| Post Condition | The user sees a "more information" icon on the tasks list for a specific day. Tapping on the "more information icon" will show more details of the event including the address if necessary. |
| Exception Paths | The attempt may be abandoned at any time. |
| Other | None. |

**3.2.27.2 Google Maps Integration**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to click on addresses and see the location on Google Maps. |
| XRef |  |
| Trigger | Clicking or tapping on the "Location" item in the details page of an event or task. |
| Precondition | By default, the user will see an option to create an event or task for a specific day. |
| Basic Path | 1. The user creates an event on a specific day by clicking or tapping on the "create event. 2. The user adds an address on the "Location" item of the details screen. 3. Once the address has been added, the user will see an icon (map with a pin) next to address of the event. 4. If user clicks or taps on the map/pin icon, a Google Maps screen will load showing the exact location of the event. |
| Alternate Path | In step 1, the user may have already created an event or task in previous interactions. The user can just tap on a day, find the event, and go to the details screen of that event. Return to step 2. |
| Post Condition | The user sees a Google Map screen of the location of the event when tapping on the icon found in the event's details screen. |
| Exception Paths | The attempt may be abandoned at any time. |
| Other | None. |

**3.2.28 Apple Maps Integration**

User's will have location support in the calendar when the user has an address listed under a calendar event. This support is specific to Apple Maps for those that use Mac or iOS.

**3.2.28.1 Support for Apple Maps on IPhone**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As an iPhone user, I want to be able to see where I'm meeting at so that I can arrive at the time scheduled. I will be on the move so I need it to work on my phone. |
| XRef |  |
| Trigger | A scheduled event with an address is clicked. |
| Precondition | The user schedules an event with an address or recognized location. |
| Basic Path | The user clicks an event with a scheduled meeting place, they click on a location icon, and the location is then used in Apple Maps. |
| Alternate Path | None. |
| Post Condition | Apple Maps brings up the location and directions. |
| Exception Paths | If there is not a location entered then no icon will appear. Apple Maps will handle invalid locations. |
| Other | None. |

**3.2.28.2 Support for Apple Maps on Mac Computers**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a Mac computer user, I want to be able to see where I'm meeting at so that I can arrive at the time scheduled. I need to be able to plan ahead of time how long I need to get there. |
| XRef |  |
| Trigger | An item is scheduled with a location. |
| Precondition | The user creates a new calendar item. |
| Basic Path | The user schedules an event, and sets a location. A small help balloon pops up that asks if they want to see the time to reach their destination. Once they click the balloon then Apple Maps is brought up with the location and the time to arrive. |
| Alternate Path | The user clicks an item with a scheduled meeting place, they click on a location icon, and the location is then used in Apple Maps. |
| Post Condition | Apple Maps must show the time required to reach the destination. |
| Exception Paths | If there is not a location entered then no icon will appear. Apple Maps will handle invalid locations. |
| Other | None. |

**3.2.29 Other Maps Integration**

The calendar application will provide support for locations with the following different applications to help a variety of map users: HERE WeGo, Waze, MapFactor, MapQuest, Scout GPS, Maps.Me and InRoute.

**3.2.29.1 Find a Location**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user of one of the map applications I want to be able to find where I need to go when I schedule it on my calendar. |
| XRef |  |
| Trigger | A scheduled event with an address is clicked. |
| Precondition | By default, the user will see an option to create an event or task for a specific day. |
| Basic Path | 1. The user creates an event on a specific day by clicking or tapping on "create event." 2. The user adds an address on the "Where" item of the create event screen. 3. The application goes back to the calendar view and shows an icon (map with a pin) next to the added event. 4. If user clicks or taps on the map/pin icon, application sends address of event as a destination to user's DEFAULT map application |
| Alternate Path | In step 1, the user may have already created an event or task in previous interactions. The user can just click on the event and add a location. Return to step 4. If a user does not have a default map application then use the google maps browser for step 4. |
| Post Condition | The user and their event location is sent to their DEFAULT map application which will plan a route to the location of the event from their current position. |
| Exception Paths | The attempt may be abandoned at any time. If a user does not have a default map application then use the google maps browser for step 4. |
| Other | None. |

**3.2.30 Video Tutorial**

The calendar application will provide a video tutorial on how to use the application. The goal is to help new users to become familiar with how to use the basic parts of the application. This will make users feel more comfortable adjusting to our application.

**3.2.30.1 Learning Application Capabilities**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want a short video tutorial on how to use the calendar application. |
| XRef |  |
| Trigger | Entering the Application for the first time. |
| Precondition | The user must be signing into the application for the first time. |
| Basic Path | 1. The user signs into the application. 2. A pop-up appears instructing the user: "Click The Link to Learn How to Use the App."  3. The user clicks on the link which takes them to Youtube. |
| Alternate Path | Include a location labeled "help" which has the link to the tutorial video for those who would like to watch it again. |
| Post Condition | After the individual has seen the pop-up for the first time it will not pop-up again. They will have to visit the help section to view the video again. |
| Exception Paths | The pop-up may be left by clicking cancel at any time. |
| Other | None. |

**3.2.31 Group Permissions**

Group owners should be able to set permissions for the users in the group. They will also have the ability to give announcements, chat, schedule meetings, and make group links.

**3.2.31.1 Group Ownership**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to be able to communicate with my group I am working with, and set how I communicate with them. |
| XRef |  |
| Trigger | Group owner goes to the group's page. |
| Precondition | The user must be a group owner. |
| Basic Path | 1. User logs into I-Learn through app. 2. User clicks the "Group" icon and the app shows his group. 3. The user can begin scheduling meetings, chatting, or posting announcements. |
| Alternate Path | In step 2, the user may not be in a group yet and will have to create a new group. |
| Post Condition | The user see's the data they just created. |
| Exception Paths | If there are no group assignments for the class the page will say: "No group work!". |
| Other | None |

**3.2.31.2 Group Member Awareness**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to be able to communicate with groups I am working with and see what the owner has posted. |
| XRef |  |
| Trigger | The user clicks on the group's page. |
| Precondition | Once the user has selected or been placed in a group. |
| Basic Path | 1. User logs into I-Learn through app. 2. User clicks the "Group" icon and the app shows his group. 3. The user can begin reading announcements, look at scheduled events, or group chat. |
| Alternate Path | In step 2, the user may not be in a group yet and will have to join an existing group that is not full yet. |
| Post Condition | The user see's the data that has been posted. |
| Exception Paths | If there are no group assignments for the class the page will say: "No group work!" |
| Other | None |

**3.2.32 Group Links**

Links are used to deep link to third party technologies for collaboration tools.

**3.2.32.1 Links to Collaborative Tools**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to be able to click a link that takes me to a group chat in Google Hangouts. |
| XRef |  |
| Trigger | The user opens an announcement or meeting and taps on the provided link. |
| Precondition | After the user has connected to I-Learn and has a group that is working on a project. |
| Basic Path | 1. User logs into I-Learn through app. 2. User clicks the "Group" icon and the app shows his group. 3. The user selects an announcement or meeting. 4. The user taps on the provided link. |
| Alternate Path | None |
| Post Condition | The link turns another color notifying the user that it has been selected. |
| Exception Paths | The link does not work and takes them to a 404 page. |
| Other | None |

**3.2.33 Sort & Filter**

Calendar items can be sorted or filtered based on details about the calendar event.

**3.2.33.1 Filter by Class**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to be able to filter my calendar items by class. |
| XRef |  |
| Trigger | The user taps on the 'filter' button on any calendar events view. |
| Precondition | The user must have calendar events for the date range showing. |
| Basic Path | 1. User clicks the "Events" icon and the app shows all current calendar events.  2. The user taps the "Filter" button.  3. The user selects the class(es) to filter by. |
| Alternate Path | None |
| Post Condition | The user sees only assignments selected by the filter query until they reset the filter. |
| Exception Paths | If the user does not have any events happening then the page will say, "No events." |
| Other | Users can choose to filter by one or multiple classes. |

**3.2.33.2 Sort by Time Length**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to be able to sort my calendar items by time to complete, grade percentage, or class. |
| XRef |  |
| Trigger | The user taps on the 'sort' button on any calendar events view. |
| Precondition | The user must have calendar events for the date range showing. |
| Basic Path | 1. User clicks the "Events" icon and the app shows all current calendar events.  2. The user taps the "Sort" button.  3. The user selects the sort criteria. |
| Alternate Path | None |
| Post Condition | The user sees assignments in the order determined by the sort criteria until the sort settings are changed or reset. |
| Exception Paths | If the user does not have any events happening, then page will say "No events". |
| Other | Users can choose to sort by time to complete, grade percentage, or class. Sort order can be changed from ascending to descending. |

**3.2.34 Personal Assistant**

A small, animated, avatar - much in the vein of "Clippy" - that suggests tasks and assignments for the user to begin work on.

**3.2.34.1 Assistant Recommends Assignments**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to be reminded of upcoming assignments that will soon be due. |
| XRef |  |
| Trigger | Automatic. |
| Precondition | The user syncs app with I-Learn and selects the assistant option. |
| Basic Path | 1. User logs into I-Learn through app. 2. User clicks the "Settings" icon and checks the "Personal Assistant" checkbox. 3. The assistant is loaded onto the screen and offers suggestions. |
| Alternate Path | If the user has already checked the "Personal Assistant" checkbox, the app will load the assistant automatically when the app is started. |
| Post Condition | The "Personal Assistant" checkbox must remain checked if the user wants to continue to use the feature. |
| Exception Paths | If there are no upcoming assignments to suggest, the assistant will say "Nothing ...yet!" |
| Other | Assistant is a small avatar that is displayed onscreen with text in speech bubbles. |

**3.2.35 Feedback**

User is notified if the instructor provides feedback on graded assignments.

**3.2.35.1 Notification of Feedback**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to be informed when my instructor leaves feedback on completed assignments. |
| XRef |  |
| Trigger | User's instructor leaves feedback on graded assignment. |
| Precondition | After the user has synced app with I-Learn and selected the "feedback" option in the "Notification Settings" menu. |
| Basic Path | 1. User logs into I-Learn through app. 2. User clicks the "Settings" icon and then taps "Notification Settings" tab. 3. User checks the "Notify of feedback" checkbox. 4. The user is notified whenever their instructor provides feedback on assignments. |
| Alternate Path | If the user has already checked the "Notify of feedback" checkbox, the app will remember the setting and continue to notify user until the user unchecks the box. |
| Post Condition | The "Notify of feedback" checkbox must remain checked if the user wants to continue to user the feature. |
| Exception Paths | If the instructor has not provided feedback on an assignment that has been graded, the app will not notify the user. |
| Other | Users are notified in the same way they are notified when assignments are due soon. |

**3.2.35.2 Feedback Included in Notification**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to read my instructor's feedback without going to I-Learn. |
| XRef |  |
| Trigger | User's instructor leaves feedback on graded assignment. |
| Precondition | After the user has synced app with I-Learn and selected the "feedback" and "Include feedback" options in the "Notification Settings" menu. |
| Basic Path | 1. User logs into I-Learn through app. 2. User clicks the "Settings" icon and then taps "Notification Settings" tab. 3. User checks the "Notify of feedback" checkbox. 4. User toggles the "Include feedback" switch on. 5. When the user is notified of feedback on assignments, the feedback is displayed to them. |
| Alternate Path | If the user has already checked the "Notify of feedback" checkbox and turned the "Include feedback" switch on, the app will remember the setting and continue to include the feedback in notifications until the user turns the switch off. |
| Post Condition | The "Notify of feedback" checkbox must remain checked if the user wants to continue to user the feature, and the "Include feedback" switch must be turned on. |
| Exception Paths | None. |
| Other | None. |

**3.2.36 Group Security**

If a user wants to join a group, they will be barred from doing so until they receive an invitation from the group owner or administrator.

**3.2.36.1 Secured Groups**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I would like to form private groups with other users and keep out any interlopers until I say so. |
| XRef |  |
| Trigger | A user creates a group. |
| Precondition | The user has logged into their I-Learn account in the app. |
| Basic Path | 1. User logs into I-Learn through app. 2. User clicks the "Group" icon and creates a group. |
| Alternate Path | None. |
| Post Condition | If another user tries to join the group, they will not be allowed until the user who created the group sends them an invitation. |
| Exception Paths | None. |
| Other | Users receive invitations through their email. |

**3.2.36.2 Group Invitation**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to join private groups through an invitation from the group creator or administrator. |
| XRef |  |
| Trigger | A user asks to join a group. |
| Precondition | A user needs to have created a group before another user can elicit them to join. |
| Basic Path | 1. User logs into I-Learn through app. 2. User clicks the "Group" icon and clicks a group to join. 3. The user waits until the group administrator sends them the invitation via email. 4. The user accepts the invitation and joins the group in the app. |
| Alternate Path | The user is rejected from the group and cannot join. |
| Post Condition | None. |
| Exception Paths | If a user has been rejected from a group, they cannot elicit the group again for an invitation after a third try. |
| Other | None. |

**3.2.37 Database for Account Usernames and Passwords**

The application will feature a database that will be used to retain usernames and password for students to access their accounts. This feature requires the user to log in to view their calendars which provides security for the student's personal information.

**3.2.37.1 Verifying Existing Account**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a student, I want to log in to my existing account and gain access to my information. |
| XRef |  |
| Trigger | A user selects the "Log In" button. |
| Precondition | The user is on the log-in page, which is first viewed when the user opens the application. |
| Basic Path | 1.The Username is sent to the server and is verified that it does exist among the list of users. 2. The password is checked to verify it matches with the given username. 3. The Database accepts the request and grants the user privileges to their account data. |
| Alternate Path | If the password does not match up with the username, the user is notified and prompted to re-enter their information. |
| Post Condition | The main calendar view is opened for the user to view their assignments. |
| Exception Paths | If the Username does not exist within the database, the process is ended and the user is requested to create an account. |
| Other | None |

**3.2.37.2 Create New Account**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a student, I want to create an account and retain my personal information inside the system. |
| XRef |  |
| Trigger | The user enters a username and password and selects the "Create Account" button. |
| Precondition | The user is on the create account page, which is linked from the log in page. |
| Basic Path | 1.The Username is sent to the server and is verified that it does not currently exist in the system. 2. The username is then added to the system using the password as the key. |
| Alternate Path | If the username already exists within the database, the user is notified and prompted to use a different one. |
| Post Condition | The user is taken to the BYU-I link page where the user is asked if they would like to connect their account to a BYU-I account. |
| Exception Paths | If the username uses invalid characters, the process is ended and the user is notified about which characters are invalid. |
| Other | None. |

**3.2.38 Inspirational Quotes and Images**

The calendar will allow users to add inspirational quotes and images to their daily views for the purpose of motivating and encouraging the user in their assignments. This will give the users a means of customizing their own calendars.

**3.2.38.1 Enter Quote Text**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to add an inspirational quote to my calendar. |
| XRef |  |
| Trigger | The user selects the "Add a quote" button. |
| Precondition | The user is viewing the single day calendar view, which is opened up by selecting one day from the main calendar view. |
| Basic Path | 1.A window opens prompting the user to type in a quote into the first input field. 2. The next input field prompts the user to enter the name of the author.  3.The user selects the "add quote" button. |
| Alternate Path | The user may choose not to add an author for the quote, which will cause only the quote to be displayed. |
| Post Condition | The prompt window closes and the quote is displayed with the author name at the bottom of the calendar view. |
| Exception Paths | If the user does not enter any text, an error message occurs and they are prompted to try again or close the window. |
| Other | None. |

**3.2.38.2 Insert an Inspirational Image**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to insert a meaningful image into my calendar view. This can be either from the internet or from my phone |
| XRef |  |
| Trigger | The user selects the "Add an image" button |
| Precondition | The user is viewing the single day calendar view, which is opened up by selecting one day from the main calendar view |
| Basic Path | 1.A window opens containing two buttons, "paste" and "import"  2. The user selects the paste button.  3.An image from the user's clipboard is pasted into the window 4.The user selects the "add image" button. |
| Alternate Path | The user chooses to import the image and the phone's image library is opened up, allowing them to select a photo from the list. |
| Post Condition | The prompt window closes and the image is displayed in the calendar view. |
| Exception Paths | If the user selects an invalid file or does not have any image on their clipboard, an error message is displayed and the user is prompted to try again or close the window. |
| Other | None |

**3.2.39 Adjustable Calendar/Calendar Item Size**

The user will be able to adjust the size of the calendar and have the calendar items scale proportionately. The user will be able to zoom in on text of an item by clicking the appropriate day or hovering their mouse over the item. Here an item is defined as any event or assignment.

**3.2.39.1 Mobile Tilting Functionality**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a mobile user, I want to view my calendar in a landscape view rather than a portrait. |
| XRef |  |
| Trigger | The user tilts their phone sideways. |
| Precondition | The user is in the main calendar view or the daily calendar view. |
| Basic Path | 1.The phone signals the application that it is turned on its side.  2.The app calculates the new width/height ratio. 3.The calendar and its items are rotated and scaled proportionately. |
| Alternate Path | The user rotates their phone back to standing upright, and the app returns the original display. |
| Post Condition | The main calendar is now displayed in a landscape view. |
| Exception Paths | If the user is continually rotating their phone (e.g.spinning it) the app waits until the phone has stopped moving to complete the function. |
| Other | None |

**3.2.39.2 Desktop Calendar Item Zooming**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a desktop user, I want to zoom in on a particular item in my calendar to read the details. |
| XRef |  |
| Trigger | The user hovers their mouse over an item in the calendar. |
| Precondition | The user is in the main calendar view or the daily calendar view. |
| Basic Path | 1.A window opens up in the middle of the screen.  2.The text of the item is display enlarged within the window.  3.The user moves the mouse away from the item to close the window. |
| Alternate Path | The user moves the mouse from one item to another. The next item is displayed in the window instead of closing it. |
| Post Condition | The user is able to view the full details of the item. |
| Exception Paths | If an item that is selected does not contain a description, The zoom window displays "No item description." |
| Other | None. |

**3.2.40 Share Calendar Feature**

The user can share their calendar and task data through their Facebook, Google Plus, and Twitter accounts. The user may also share their data through email. In addition to this, the user will also be able to post an advertisement for the app itself on their social media.

**3.2.40.1 Connect to Social Media**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I can connect my calendar application to three variants of social media: Facebook, Google Plus, and Twitter. |
| XRef |  |
| Trigger | The user clicks the "Share" button. |
| Precondition | By default, the user will see an option to share. |
| Basic Path | A window opens and four choices are presented after clicking "Share": "Facebook", "Google Plus", "Twitter", and "email". The user chooses any of the first three options. Depending on the social media selected the user will be presented with a login screen associated with the selected media where the user will enter their associated username and password. The user will then select the "Login" button and be presented with a message notifying the user that the application is connected to the chosen social media. |
| Alternate Path | None. |
| Post Condition | The share option will not direct the user to the login page for the specified social media anymore. |
| Exception Paths | The user may select "Cancel" to exit at any point in the process. |
| Other | None. |

**3.2.201.2 Share Calendar Application Advertisement Through Social Media**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I can share the an advertisement for the application on social media. |
| XRef |  |
| Trigger | The user clicks the "Share" button. |
| Precondition | The user has already connected the application to social media. |
| Basic Path | A window opens and four choices are presented after clicking "Share": "Facebook", "Google Plus", "Twitter", and "email". The user selects the social media they would like to share to. The user will then be asked to confirm whether they want to "Share" or "Cancel". If the user chooses to share, then they will be notified that the advertisement for the app has been shared. If they cancel, the share window will be closed. |
| Alternate Path | None. |
| Post Condition | The user is presented with a notification that the calendar is shared. |
| Exception Paths | The user may select "Cancel" to exit at any point in the process. |
| Other | None. |

**3.2.40.3 Share Calendar Through Email**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I can share the application by sending an email to potential recipients. |
| XRef |  |
| Trigger | The user clicks the "Share" button. |
| Precondition | By default, the user will see an option to share. |
| Basic Path | A window opens and four choices are presented after clicking "Share": "Facebook", "Google Plus", "Twitter", and "email". The user chooses "email" and is presented with an email interface including a section for the recipient's email address and a text box for entering any messages to the recipient. 2. The user fills out both of these fields and then clicks the "Send" button. The user is then presented with a notification saying "Message Sent". |
| Alternate Path | None. |
| Post Condition | The user is presented with a notification that the calendar is sent. |
| Exception Paths | The user may select "Cancel" to exit at any point in the process. |
| Other | None. |

**3.2.41 Weather**

When you click on an event it will include the predicted weather for that day.

**3.2.41.1 Weather for Specific Days**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | A user wants to know what the weather will be like for a specific day. |
| XRef |  |
| Trigger | When the user selects a planned event, the event window will additionally display the predicted weather that day. You can also see the predicted weather in the event planning window as well. |
| Precondition | Have an account created and/or have an event planned. |
| Basic Path | 1. Create account with Student Calendar.  2. Select day where user would like to plan an event.  3. System displays event creation window and on there the weather predicted shows up as well. |
| Alternate Path | 1. Select an event that has been created. 2. System displays the event window along with the predicted weather that day. |
| Post Condition | User is updated with information about that days weather. |
| Exception Paths | User can close event window at any time. |
| Other | None. |

**3.2.42 Tutor Integration**

The user will be able to schedule a tutor from the BYU-I website.

**3.2.42.1 Schedule a Tutor**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to quickly set a tutor appointment. |
| XRef |  |
| Trigger | The user presses the "Tutor Request" button. |
| Precondition | User must have a Student Calendar app account, available Internet access, and be enrolled at BYU-I. |
| Basic Path | 1. User presses the "Tutor Request" button.  2. A new window opens up redirecting the student to the BYU-I Tutor's website. |
| Alternate Path | None. |
| Post Condition | The event is created and has a section where the user can add information about the tutor session created. |
| Exception Paths | The window can be closed at any time, thereby cancelling the tutor event. |
| Other | None. |

**3.2.43 School Functions**

The user will be reminded of upcoming social events.

**3.2.43.1 School Functions Reminder**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a social student, I want to be reminded of upcoming social events so that I may attend them. |
| XRef |  |
| Trigger | The user clicks "Sign in to BYU-I" button. |
| Precondition | Registered student at BYU-I college. |
| Basic Path | 1. Select Sign in.  2. System finds event calendar on BYU-I website. 3. Side panel is filled in with the events. They are not put in the regular calendar to avoid clutter. |
| Alternate Path |  |
| Post Condition | Student calendar has a side panel that is updated with the school functions and events. |
| Exception Paths | User could decide not to sign into BYU-I and therefore not have the school event list. |
| Other |  |

**3.2.044 Printing**

The user will be able to print off a schedule.

**3.2.044.1 Printing**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | The user wishes to print off their schedule to view offline/out of app. |
| XRef |  |
| Trigger | User selects "Print" button at top of screen to print weekly or monthly view. |
| Precondition | Calendar is being viewed in monthly or weekly view and is connected to a printer. |
| Basic Path | 1. The user selects print option. 2. The user crops desired part of calendar.  3. The user selects print options (ex: color, page count).  4. User selects print. |
| Alternate Path | None. |
| Post Condition | The calendar is left unchanged. The user has printed selection of the calendar. |
| Exception Paths | None. |
| Other | None. |

**3.2.045 Badges**

Show badges indicating how many messages, notifications, or tasks that have not been seen.

**3.2.045.1 View Badges**

| Data | Description |  
|Use Case Detail| As a user, I want to see if there are new notifications in the app while outside of it. | |XRef | None| |Trigger | User checks device to see if there are any notifications from the calendar app(badges).|  
|Precondition | Events created, School functions connected.| |Basic Path | 1. Select a badge   
2. Select from badges event or notification to view   
3. Continue looking through badges until out or until user has seen what they wanted to.| |Alternate Path | None.| |Post Condition | Badges are cleared and system is ready to set more.| |Exception Paths| User may not check all the badges which leaves some notifications still up.| |Other | None.|

**3.2.46 Quick Access**

The user has the option to be quickly directed to I-Learn and specifically individual classes within I-Learn.

**3.2.46.1 Quick Access Class Selection**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user I can access my classes in I-Learn through links. |
| XRef | None |
| Trigger | The user clicks the "Quick Access" button. |
| Precondition | The user must be logged into the calendar application and be synced with I-Learn. |
| Basic Path | 1. After clicking "Quick Access" a drop-down menu is displayed with the user's current I-Learn courses. The user clicks one of these courses and is redirected to the I-Learn website and more specifically the class selected within the site using the device's default web browser. |
| Alternate Path | None. |
| Post Condition | The user is presented with a notification that the calendar is sent. |
| Exception Paths | 1. If there is no internet access the user will receive an error message saying "No Internet Connection". |
| Other | None. |

**3.2.47 Assignment Alarm**

The user has the option to set an alarm for individual assignments that will let the user know when they should begin working on the assignment.

**3.2.47.1 Setting the Assignment Alarm**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I can set an alarm that lets me know when to work on an assignment. |
| XRef | None |
| Trigger | The user clicks an existing assignment event on the calendar. |
| Precondition | An assignment event must already be created. |
| Basic Path | 1. After clicking an assignment event a window will pop up displaying the details of the event. The user will click the "Alarm" button.  2. The alarm interface will give the user drop-down options for date and time for the alarm to trigger. After selecting the date and time the user will have the option of clicking "Set" or "Cancel". "Cancel" closes the alarm interface and "Set" sets the alarm. |
| Alternate Path | None. |
| Post Condition | The user will receive a notification that the alarm has been set for a specified date and time. When the alarm triggers, the notification will include the name of the assignment for which the alarm was set. |
| Exception Paths | None. |
| Other | None. |

**3.2.48 Share Option**

The calendar app can sync with other calendars via social media.

**3.2.48.1 Sharing Calendars**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to connect to other people's calendars and social media events so I can view all my life's related events in one place. |
| XRef | None |
| Trigger | User clicks on the "Share" button. |
| Precondition | User logged in to the calendar application. |
| Basic Path | User is presented with a window or form where "request to shared calendar" can be requested or supported social media account selected and credentials entered. |
| Alternate Path | None. |
| Post Condition | User can select shared calendars to view alongside school calendar/events and can selectively view one or all calendars through a toggle. |
| Exception Paths | The preferred social media service is not supported. Authentication fails even if proper credentials are entered. Shared calendar data does not update. |
| Other | None. |

**3.2.49 Sync and Success Share**

The Calendar app is able to sync and be updated from the browser or a compatible site. The user should also be able to share their success on social media.

**3.2.49.1 Enable Synchronization with I-Learn**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to synchronize my calendar with I-Learn so I don't have to manually enter all my assignments |
| XRef | 3.2.3 I-Learn Calendar API Integration |
| Trigger | User clicks on I-Learn Synchronization button in Settings |
| Precondition | User knows I-Learn username and password, and is connected to the internet |
| Basic Path | Settings -> I-Learn Calendar Synchronization |
| Alternate Path | None |
| Post Condition | I-Learn assignments are imported successfully. |
| Exception Paths | Incorrect credentials, I-Learn authentication not responding |
| Other | None |

**3.2.49.2 Google Chrome Add-on Add to Calendar**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to add items to my calendar from websites to save time entering them |
| XRef | Google Chrome Extension |
| Trigger | User clicks add to calendar in context menu |
| Precondition | Chrome extension installed & signed in |
| Basic Path | User highlights a date or phrase in Chrome, then right clicks |
| Alternate Path | None |
| Post Condition | Desired event is added to calendar |
| Exception Paths | Highlighted data can't be parsed, extension not authenticated |
| Other | None |

**3.2.49.3 Google Chrome Add-on Reminder About Upcoming Deadline**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to get reminders about upcoming deadlines as a popup in Chrome to help me meet deadlines |
| XRef | Google Chrome Extension |
| Trigger | An assignment is due within the configured reminder time |
| Precondition | Chrome extension installed, signed in, and configured to give reminders |
| Basic Path | None |
| Alternate Path | None |
| Post Condition | None |
| Exception Paths | API unavailable |
| Other | None |

**3.2.49.4 Share User's school success to Google Plus**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to share my success on Google Plus |
| XRef | Google Plus |
| Trigger | User clicks Google Plus widget |
| Precondition | User has created and completed an assignment |
| Basic Path | Widget appears after marking an assignment complete |
| Alternate Path | Widget appears on page of completed assignment |
| Post Condition | None |
| Exception Paths | Can't authenticate to post to Google Plus |
| Other | None |

**3.2.49.5 Share Success to Facebook**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to share my success on Facebook |
| XRef | Facebook |
| Trigger | User clicks Facebook widget |
| Precondition | User has created and completed an assignment |
| Basic Path | Widget appears after marking an assignment complete |
| Alternate Path | Widget appears on page of completed assignment |
| Post Condition | None |
| Exception Paths | Can't authenticate to post to Facebook |
| Other | None |

**3.2.50 Priority Assignments**

This will allow users to mark certain assignments as 'Priority'. Will help users quickly identify important assignments.

**3.2.50.1 Set Assignment Priority**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to set an assignment as high priority |
| XRef | None |
| Trigger | The user clicks the "Priority" button. |
| Precondition | The user is in the assignment detail view |
| Basic Path | 1. The user clicks the "Priority" button in the assignment detail view  2. The user is presented with the options "High", "Medium" and "Low" 3. The user selects the "High" option |
| Alternate Path | The user can select "Medium" or "Low" as the assignment priority |
| Post Condition | The assignment detail view is shown, with the assignment set to high priority |
| Exception Paths | The user can exit priority selection or set the assignment back to default low priority. |
| Other | None |

**3.2.50.2 Priority View**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to view my assignments based on priority |
| XRef | None |
| Trigger | The user clicks the "Priority View" button. |
| Precondition | The user is in the calendar view |
| Basic Path | 1. The user clicks the "Priority View" button |
| Alternate Path |  |
| Post Condition | The calendar view displays assignments sorted by priority |
| Exception Paths | The user can change the calendar view back to assignments sorted by due date. |
| Other | None |

**3.2.51 Google API**

The user will be able to sync their Google Calendar with our Student Calendar App.

**3.2.51.1 Sync Google calendar**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I would like to sync my Google Calendar into the app. |
| XRef | None |
| Trigger | User login to Google Calendar |
| Precondition | User must have Google account |
| Basic Path | 1.Ask User for Google sign in.  2.Login using Google API.  3.Sync calendar items. |
| Alternate Path | None |
| Post Condition | Google Calendar items will be Synced |
| Exception Paths | User can logout of Google account |
| Other | None |

**3.2.52 Apple API**

The user can sync their Apple Calendar with their Student Calendar App.

**3.2.52.1 Sync Apple Calendar**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | The User would like to sync their Apple Calendar into the app |
| XRef | None |
| Trigger | The user clicks "Apple Login" |
| Precondition | The user must have an Apple ID |
| Basic Path | 1. The user clicks on "Apple Login"  2. The user is presented with an Apple login page  3. The user enters their login information, and clicks "Login"  4. The user is brought back to the calendar view |
| Alternate Path | None |
| Post Condition | The user's Apple calendar events with be synced and displayed in the calendar view. |
| Exception Paths | The user can exit the login process or logout of their Apple account. |

**3.2.53 Outlook API**

The user can sync their Outlook Calendar with our Student Calendar App.

**3.2.53.1 Sync Outlook Calendar**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I would like to sync my Outlook Calendar with the app. |
| XRef | None |
| Trigger | The user clicks "Outlook Login". |
| Precondition | The user must have an Outlook account. |
| Basic Path | 1. The user clicks on "Outlook Login"  2. Login using Outlook API.  3. The calendar syncs. |
| Alternate Path | None |
| Post Condition | The user's Outlook calendar events with be synced and displayed in the calendar view. |
| Exception Paths | The user can exit the login process or logout of their Outlook account. |
| Other | None |

**3.2.54 Toolbox Bar**

This bar will have many other buttons and bars related to searching, timer, progress and meeting times.

**3.2.54.1 Search Bar**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to search the calendar app. |
| XRef |  |
| Trigger | User clicks on the search bar. |
| Precondition | User is logged into the calendar app. |
| Basic Path | 1. User selects the search bar and enters in keyword. |
| Alternate Path | User selects search button and enters in keyword. |
| Post Condition | User has searched for a keyword. |
| Exception Paths | If the keyword is not found the user will be prompted to try a different keyword. |
| Other | None. |

**3.2.54.2 Timer**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | User has limited time to complete assignment, calendar app shows how long assignment will take to complete. |
| XRef |  |
| Trigger | User has an assignment that needs to be completed. |
| Precondition | User is logged into calendar app and looking assignment. |
| Basic Path | 1. User selects the timer function to determine time needed to complete assignment. |
| Alternate Path | None. |
| Post Condition | User is given an estimate of how long it will take to complete given assignment. |
| Exception Paths | If user hasn't completed any assignments then the timer will display a message to explain this. |
| Other | None. |

**3.2.54.3 Assignment Progress Bar**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | User wants to know how many assignments they have completed. |
| XRef |  |
| Trigger | User has linked app with school. |
| Precondition | User is looking at assignments for given week. |
| Basic Path | 1. User selects the assignment progress bar. |
| Alternate Path | None. |
| Post Condition | User can see how many assignments have been completed for specific class and how many are left to complete. |
| Exception Paths | If user hasn't added classes then there will be no progress bar. |
| Other | None. |

**3.2.54.4 Suggest Meeting Times**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | A user needs to know when they can meet with other students. |
| XRef |  |
| Trigger | A user has selected the meet with others button. |
| Precondition | User has added associates to calendar app. |
| Basic Path | 1. User navigates to meet with others button. |
| Alternate Path | None. |
| Post Condition | User is able to see availability of associates. |
| Exception Paths | User hasn't added anyone to app and is unable to see availability. |
| Other | None. |

**3.2.55 Twitter**

User will be able to use Twitter while having their calendar up. This will allow the user to connect to other people sharing similar assignments, groups, or just something inspirational or motivational.

**3.2.55.1 Twitter**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to connect the calendar application with my Twitter account to post and share groups, assignments or thoughts directly from the app. |
| XRef |  |
| Trigger | The user would click the "Share" button and then choose the platform they wish to share from, in this case, Twitter. |
| Precondition | By default, the user will see an option to share. |
| Basic Path | 1. A window opens and four choices are presented after clicking "Share": "Facebook", "Google Plus", "Twitter", and "Email". The user chooses any of the first three options. 2. Depending on the social media selected the user will be presented with a login screen associated with the selected media where the user will enter their associated username and password.  3. The user selects the "Login" button and is presented with a message notifying the user that the application is connected to the chosen social media. |
| Alternate Path | None. |
| Post Condition | The share option will not direct the user to the login page for Twitter anymore. |
| Exception Paths | The user may select "Cancel" to exit at any point in the process. |
| Other | None. |

**3.2.56 Instagram**

User can connect to Instagram on the calendar to share pictures of their calendar.

**3.2.56.1 Instagram**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | The user can connect to and use Instagram in the calendar application to post and share their thoughts from the app itself. |
| XRef |  |
| Trigger | The user would click the "Share" button and then choose the platform they wish to share from, in this case, Instagram. |
| Precondition | By default, the user will see an option to share. |
| Basic Path | 1. A window opens and four choices are presented after clicking "Share": "Facebook", "Google Plus", "Twitter", and "Email". The user chooses any of the first three options.  2. Depending on the social media selected the user will be presented with a login screen associated with the selected media where the user will enter their associated username and password.  3. The user selects the "Login" button and is presented with a message notifying the user that the application is connected to the chosen social media. |
| Alternate Path | None. |
| Post Condition | The share option will not direct the user to the login page for Instagram anymore. |
| Exception Paths | The user may select "Cancel" to exit at any point in the process. |
| Other | None. |

**3.2.57 Custom Images and Icons**

The calendar should be able to be personalized. The user will have the ability to interact with the app to change things to their favorite images for the display options on their calendar.

**3.2.57.1 Custom Images and Icons**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to utilize custom images and icons to personalize the appearance of the calendar app |
| XRef |  |
| Trigger | The user clicks the "Settings" button and then chooses the "Appearance" option |
| Precondition | By default, the user will have option to the settings menu throughout the app. |
| Basic Path | 1. The user selects the settings button and scroll to the "Appearance" option. 2. The user selects custom images for class icons, backgrounds and layout. |
| Alternate Path | The user can customize the appearance for other classes. |
| Post Condition | The user will have a customized view and appearance for each class and layout. |
| Exception Paths | The user may select "Cancel" to exit at any point in the process. |
| Other | None. |

**3.2.58 Custom Videos**

The calendar will ask for camera permissions so that the user can use videos to customize their display options.

**3.2.58.1 Custom Videos**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | While interacting inside the app, the user can utilize and imbed videos to customize the display options. |
| XRef |  |
| Trigger | The user would click the "Settings" button and then choose the option that offers customization. In this case it would be "Appearance". |
| Precondition | By default, the user will have option to the settings menu throughout the app. |
| Basic Path | 1. The user would select the settings button and scroll to the "Appearance" option. Then they will be given choices of customization with images for class icons, backgrounds and layout. |
| Alternate Path | The user can have the ability to select a class and go to settings in each different class to customize the appearance. |
| Post Condition | The user will have a customized view and appearance for each class and layout. |
| Exception Paths | The user may select "Cancel" to exit at any point in the process. |
| Other | None. |

**3.2.59 To-Do Task Engine**

The user is going to be able to create their tasks, events and notifications. There will be a To-Do list view where the user can check to see what they have planned for their calendar.

**3.2.59.1 Calendar Task & To-Do Engine**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | The user can make use of the To-Do and Task engine in order to create tasks, events, and notifications. These will be visible in the calendar and in a To-Do list view. It will also support tasks without a specific deadline. |
| XRef |  |
| Trigger | The user will click a 'create new task' button. |
| Precondition | The UI will include a 'create new task' button. |
| Basic Path | 1. The user will click on the 'create new task' button, visible in the main calendar view. |
| Alternate Path | The user will click on the 'create new task' button, visible in the To-Do list view. |
| Post Condition | The task will be added to both the calendar and the To-Do list. |
| Exception Paths | The user may select either 'cancel' while he or she is creating the task, or 'delete' to delete it after the fact. |
| Other | None. |

**3.2.60 Calendar View**

The User will be able to select the calendar view style that suits them best.

**3.2.60.1 Various Calendar Views**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | The calendar includes Day, 5-day Week, 7-day Week, Month, Semester, and Year views. The user can easily switch views, and the current date will be highlighted. |
| XRef |  |
| Trigger | The selected view will be used to display the calendar whenever the user opens the calendar portion of the app. |
| Precondition | The default view will be 'Month', and the user will have the ability to select their preference in Settings. |
| Basic Path | 1. Above the top of the calendar, there will be dedicated buttons to switch to Month, 7-day Week, and Day view. |
| Alternate Path | For the other views, the user will click 'Calendar Settings', and then 'Calendar View'. They will then make their selection from the available views. |
| Post Condition | The calendar's view setting will be updated and henceforth the calendar will be displayed in the view style that the user selected. |
| Exception Paths | If the user wishes to undo their selection, they will simply select the view that they had previously been using. |
| Other | None. |

**3.2.61 Task Rewards**

The user has the option of enabling a rewards system to encompass different real-world tasks.

**3.2.61.1 Goal/ XP bar**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to use a video game-like point system, where I am rewarded with virtual points when I complete tasks. |
| XRef |  |
| Trigger | This feature will be enabled if the user decides to enable it from the settings menu, and it will be present when they create tasks, and when they mark them complete. |
| Precondition | The feature will only enable if the user wants to. |
| Basic Path | 1. The user clicks 'Settings'. 2. The user clicks 'Adventure Mode'. 3. The user toggles the mode's setting toggle to 'on'. |
| Alternate Path | None. |
| Post Condition | After enabling this feature, the sidebar will include a Points and XP 'character stats' display akin to those found in video games, the 'create task' dialogue will prompt the user for task's point values, and the app will award points upon task completion. |
| Exception Paths | This setting can be disable with the same settings toggle that enabled it. |
| Other | If point system is disabled, points should be saved in the event the system is re-enabled. |

**3.2.62 User Task List**

The User has the option to view all upcoming tasks in their courses.

**3.2.62.1 Assignment List**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | The app includes a list view where all the user's tasks from all classes and categories are visible. |
| XRef |  |
| Trigger | The user presses the 'list view' button. |
| Precondition | This feature has no precondition - If the user has not added any tasks yet, then the list will be empty. |
| Basic Path | 1. 'List view' button visible on main view of app. |
| Alternate Path | 'List view' button visible in app navigation drawer. |
| Post Condition | The list view is displayed. |
| Exception Paths | The user can navigate back to the calendar view by simply pressing the 'calendar' button visible at the top of the list view display. |
| Other | None. |

**3.2.63 School Catalog**

This feature allows the user to view the entire catalog for their respective school.

**3.2.63.1 View School Catalog**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to view the courses offered at my school. |
| XRef |  |
| Trigger | A user selects the view catalog button. |
| Precondition | A user must be enrolled at a school and connect that school with the app. |
| Basic Path | Go to the view catalog button and select it. |
| Post Condition | The user is in the catalog view for their school. |
| Exception Paths | A user is not registered for a school and receives an error message stating so. |
| Other |  |

**3.2.64 Class Help**

This feature provides some links to websites that would be helpful for a given assignment or task.

**3.2.64.1 Help with class**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to find help and information for an assignment. |
| XRef |  |
| Trigger | A user selects the class help button. |
| Precondition | A user must have registered for classes and must be linked up properly with the application. |
| Basic Path | A user navigates to the class help button and selects it. |
| Post Condition | A user is viewing a selection of links. |
| Exception Paths | No available links have been connected to this assignment and user receives an error message to alert them. |
| Exception Paths | No assignment has been selected so no links are found, user is asked to select an assignment. |
| Other |  |

**3.2.65 Travel Time**

Marked for deletion! Section 3.2.027 - 3.2.029 already uses 3rd party applications to find this.

This feature shows the user the expected travel time for a particular event that is stored on the calendar.

**3.2.65.1 Travel Time**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | A user has an upcoming event and wants to find out how long it will take them to get there. |
| XRef |  |
| Trigger | The user has selected an event on their calendar. |
| Precondition | A user must have a valid event stored in calendar. |
| Basic Path | A user selects an event on their calendar. |
| Post Condition | A user is viewing the expected travel time for the selected event. |
| Exception Paths | No valid event was selected. |
| Exception Paths | The application is unable to determine the distance to the event and an error message is displayed to the user. |
| Other |  |

**3.2.066 Night Mode**

Night mode is a setting that allows the user to toggle a blue light filter to reduce eye strain.

**3.2.066 Night Mode**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user, I want to apply a blue light filter to reduce the strain on my eyes from the screen, especially at night. |
| XRef | None |
| Trigger | A user toggles night mode in the settings. Additionally, the calendar can automatically switch to "Night Mode" at sunset according to location. |
| Precondition | A user opens the settings menu and toggles night mode or configures automatic option. |
| Basic Path | 1. User chooses to toggle night mode.  2. User enters settings page.  3. The user presses the night mode button.  4. The application applies a blue light filter. |
| Alternate Path | A brief description of the purpose for night mode will appear on first activation with the option of configuring the option according to time. |
| Post Condition | A blue light filter has been added. |
| Exception Paths | None. |
| Other | Blue light has been proven to alter circadian rhythm and increase eye-strain. |

**3.2.067.0 Tutor Integration - Duplicate of 3.2.043 Marked For Deletion**

!!MARKED FOR DELETE!!

| **Tutor Integration** | **Select a tutor appointment from BYU-I website** |
| --- | --- |
| Use Case Detail | Todo |
| XRef |  |
| Trigger | User selects tutor request button |
| Precondition | Account created on Student Calendar app, Internet Access |
|  | , and an account with BYU-I as a student |
| Basic Path | 1. User selects request tutor button |
|  | 2. New window opens directing to BYU-I Tutor website |
| Alternate Path |  |
| Post Condition | Event is created and has a section where the user can add |
|  | information about the tutor session created |
| Exception Paths | Window can be closed at any time, not setting tutor event |
| Other |  |

**3.2.068.0 Quick Add**

| **Tutor Integration** | **Adds an event to a calendar day with only a name** |
| --- | --- |
| Use Case Detail | Quick add todo |
| XRef |  |
| Trigger | User selects quick add button |
| Precondition | A quick add button is on the screen |
| Basic Path | 1. User selects quick add button |
|  | 2. Form opens and asks for name of file |
|  | 3. Program adds event to selected day |
| Alternate Path |  |
| Post Condition | Event is created on selected day |
| Exception Paths | Window can be closed at any time, not creating event |
| Other |  |

**3.2.069.0 Edit Event**

| **Edit Event** | **Edits an event that has been scheduled.** |
| --- | --- |
| Use Case Detail | A user wants to edit an event. |
| XRef |  |
| Trigger | User selects edit button on event. |
| Precondition | An edit button is on event. |
| Basic Path | 1. User selects edit button. |
|  | 2. Form with event information opens. |
|  | 3. User changes event information. |
|  | 4. Program changes event information in calendar. |
| Alternate Path | None. |
| Post Condition | Event that is selected is changed |
| Exception Paths | The window can be closed at any time, not editing event. |
| Other | None. |

**3.2.70 Non-SSO**

The user will be required to log into the application with a single ID and password which will only give them access to the calendar application, no other domains.

**3.2.70.1 Non-SSO Log In**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user I can log in to the calendar application with a username and password. |
| XRef | 3.2.37 |
| Trigger | The application is executed for the first time. |
| Precondition | The user is viewing the log in page. |
| Basic Path | 1. The user enters their username and password into the appropriate fields. 2. The user then selects the "Log In" button. |
| Alternate Path | If the password entered does not match, the user is prompted to re-enter it again. |
| Post Condition | The user's calendar is opened and functional. |
| Exception Paths | If the username is not contained within the server database, the user will be asked to create a new account. |
| Other | None |

**3.2.70.2 Non-SSO Log Out**

| **Data** | **Description** |
| --- | --- |
| Use Case Detail | As a user I can log out of the calendar application. |
| XRef | 3.2.37 |
| Trigger | The user clicks the "Log Out" button. |
| Precondition | The user is currently logged in to the calendar application. |
| Basic Path | 1. The user clicks the "Log Out" button. 2. The user is then asked if they are certain they want to log out. If the user selects yes, then they are logged out. If they select no, they will be returned to the calendar. |
| Alternate Path | None |
| Post Condition | The user is presented with the log in screen as if they had first launched the application for the first time. |
| Exception Paths | None |
| Other | None |

**3.3 Usability Requirements**

The Student calendar must be uniform in its appearance and functionality to improve learnability for the user. This will be accomplished through the following criteria:

**Simple GUI**

The application will have large functional icons visible to the user whenever they are viewing the Main or daily calendar pages.

The process of adding, removing, and modifying events should require similar steps to make easy to remember and perform those actions.

**Navigation**

The Student Calendar will be able to move from each view to another with no more than one click.

Each window must feature a close 'X' icon to make it simple for the user to cancel any action and return to the previous view

**Tutorial**

New Users will be introduced to the Student Calendar functionality through tutorial message windows.

The application will offer a help menu that the user may select to learn how to find commonly used features.

**3.4 Performance Requirements**

The Student Calendar must be interactive with delays in action-response functionality kept to a minimum. When opening window forms or displaying error messages, the delay shall be shorter than 2 seconds. When accessing the user account database, the operation of opening user preferences, sorting user items, and displaying the user calendar will be performed within 10 seconds 95% of the time. This is provided the user has a reliable internet connection. Time to Connect to the server will be based on the distance between the user's machine and the server but the application will determine if the connection is successful within 20 seconds.

**3.5 Logical Database Requirements**

There are three data entities involved with the application and the user account database: Calendar Assignments, Calendar Events, and Users. These entities and the information associated with them will be stored in their respective relational tables on the web server. The following is a brief classification of each of these entities and their attributes:

| **Data** | **Attributes** | **Use** |
| --- | --- | --- |
| Calendar Assignments | * ASSIGNMENT\_ID * User\_ID * ASSIGNMENT\_NAME * ASSIGNMENT\_CLASS * ASSIGNMENT\_DESCRIPTION * ASSIGNMENT\_DUE\_DATE * ASSIGNMENT\_DUE\_TIME | The calendar assignments entity is used to organize assignments that are gathered from the I-learn website into the Student Calendar. Assignment data can also be created by the user within the application. |
| Calendar Events | * EVENT\_ID * USER\_ID * EVENT\_NAME * EVENT\_TIME * EVENT\_LOCATION * EVENT\_DESCRIPTION | The calendar events data are user created items that are saved in the database for future user access. |
| Users | * USER\_ID * GROUP\_ID * USER\_FIRST\_NAME * USER\_LAST\_NAME * USER\_EMAIL * USER\_PHONE * USER\_LOGIN\_NAME * USER\_PASSWORD | The User data are the collection of information pertaining to each user including group memberships and contact information. |

**3.6 Design Constraints**

The main design constraints of the Student Calendar will be its web based platform. The user will be required to have an web browser to access the application. The application will not be able to run on all web browsers, so system design will be tailored to work with the more popular web browsers. The application will also be subject to standards of compliance for FERPA, ADA, and BYU-Idaho. This will place constraints on how data may be transferred between the application and I-learn. It will also require added functionality, such as voice recognition, so that disabled students may use the application. All text and language used in the software must comply with BYU-Idaho's honor code.

**3.7 Software System Attributes**

**AVAILABILITY: The Student Calendar should be available to users twenty-four hours a day, seven days a week unless the software is undergoing scheduled maintenance.**

**CORRECTNESS: The Student Calendar must display all user assignments and events in their correct times and dates. User groups must display correct contact information.**

**MAINTAINABILITY: Developers shall be able to be maintain and update the system after its intial release. Modifications should be able to be made while the system is live. Major changes shall require scheduled maintenance and the application will not be accesible to users. Maintenance notices must be sent to all users at least two days prior to going offline.**

**SECURITY: The systems security requirements shall conform to FERPA standards.**

**4.0 Verification**

**4.1 Verify External Interface Requirements**

**4.2 Verification Functional Requirements**

In this section of the document we will provide high level details on how we will verify that the functional feature requirements are being met. The specific Test Cases will be descripted in the SDD portion of the document. This section is not intended to contain the test case specifics.

**4.2.1 Calendar Application is Mobile**

Validation will be successful if the application is available and usable on mobile platforms

**4.2.1.1 Smartphone Application**

We will check if the application is available on iOS and Android, as well as usable on mobile web browsers.

**4.2.2 Calendar Application is Web**

Validation will be successful if the application is able to be pulled up in a web browser.

**4.2.2.1 Access From Web Browser**

We will use multiple web browser clients to verify that it is web compatible.

**4.2.3 Calendar Application API**

Validation will be successful if the application's capabilities can be expanded by any user

**4.2.3.1 Add a Plugin**

We will write a custom plugin and add it to the application to verify the application's capabilities can be expanded by any user

**4.2.4 Priority View**

Validation will be successful if the application is able to display a priority list when the user taps on a specific day.

**4.2.4.1 Assignment Priority List**

We will test multiple days on the calendar to verify that a list is shown containing assignments ranked by due-date and level of priority.

**4.2.4.2 Task Priority Labels**

We will add task labels (High, Medium, Low) to custom tasks and verify that the tasks are properly ranked showing the appropriate priority label.

**4.2.5 ADA Compliant**

Validation will be successful if the application responds to the user's voice and performs the intended requests, and if it reads content to user.

**4.2.5.1 Speech Recognition**

We will test multiple voice commands to make sure the application responds accurately to the user's requests.

**4.2.5.2 Auto Reading**

We will test the "Read Assignments" voice command to make sure that the application performs the intended request on specific days. We will also test the application's response after the user chooses an option: Today, This Week, This Month.

**4.2.6 Export/Import**

Validation will be successful if the application can export to and import content from other third-party applications.

**4.2.6.1 I-Learn Import**

We will test the I-Learn import functionality and verify that all content from I-Learn's calendar is added to the application.

**4.2.6.2 Export**

We will test the export functionality and verify that the application's content is successfully added to other third-party applications such as Google Calendar and Apple Calendar.

**4.2.7 Reminders**

Validation is achieved if the user is able to achieve alerts for events/assignments before they are due.

**4.2.7.1 The user oftens forgets about assignments**

This feature can be tested by giving a user assignments and seeing if they are able to complete all assignments.

**4.2.8 Links**

We are able to receive validation if users are posting links to assignments or events.

**4.2.8.1 The users group uses outside resources like google docs.**

This can be tested by tapping on different links and confirming that the app deep links to the expected app or website.

**4.2.9 Photo Import**

Validation is achieved when a user can upload the desired photo whether from their camera or photo library.

**4.2.9.1 The user wants to upload a photo to clarify their message**

This feature can be tested by uploading a photo to an event, and then taking a photo to upload and verifying that the photo uploaded successfully.

**4.2.10 Collapsible Calendar**

| Validation is successful if user is able to adjust the list of Calendar items for a day from few to all. |

**4.2.10.1 Calendar list of events extended.**

| Simple UI testing post-completion, by tapping a button labeled 'Show all', will prove the functionality of this feature. |

**4.2.11 Group Communication 1: message chat**

| Validation is successful if user is able to message group members from app by clicking a single button. |

**4.2.11.1 Group Message Chat**

| This feature will be tested by having a tester join a group and tap the 'Contact' button for a single group member. |

**4.2.12 Group Communication 2: Video Chat**

| Testing is successful if user opens a group video chat in Skype or Google Hangouts though the app. |

**4.2.12.1 Video Chat**

| We will have a tester attempt to start a video chat after joining a group. If the third-party video chat app opens and the tester can talk to all other members, the feature is successfully implimented. |

**4.2.13 FERPA compliant**

Validation will be successfull when app functions are found to meet FERPA guidelines.

**4.2.13.1 Be FERPA compliant**

App will be FERPA compliant at all times.

**4.2.14 Discussion Board Integration**

Validation will be successful if the app is able to access the discussion boards.

**4.2.14.1 View discussion board**

We will test discussion board access to multiple courses on multiple accounts.

**4.2.14.2 Post to discussion board**

Posting to discussion boards will be verified by making a post with one account on one device, then checking on another account and device to make sure it was posted.

**4.2.15 Time Clock**

Validation will be successful if the times the student sees in their calndar app is accurately adjusted according to the time zone they entered.

**4.2.15.1 Set time zone**

The correct time zone value will be verified by comparing the app time, to the actual time in that time zone.

**4.2.16 Recurring Appointments**

Validation is successful if user is able to set and adjust recurring events in the calender

**4.2.16.1 User defines an appointment to repeat a certain number of times.**

Post-completion testing will have a tester attempt to create an event on one day in the calender and set it to repeat every day, week, month, or year.

**4.2.17 Grades**

Validation is successful if the user is able to see the grade their instructor has given an assignment that has been completed.

**4.2.17.1 Scores in every assignments and overall grades**

A tester will submit a test assignment, another tester will “grade” it, and the original test will confirm whether they see the grade in the calender or not.

**4.2.18 Widget**

Validation is successful if the user is able to create an Android Widget for the app on their device.

**4.2.18.1 Widget support for Android**

Installing app on Android device and creating a widget will satisfy testing.

**4.2.19 Active Directory / LDAP**

Validation will be successful if the user is able to see a student list from the class page and is allowed to send and receive data from students on that list.

**4.2.19.1 Contact Class Member**

We will use multiple email clients, web browsers, and operating systems between two students to confirm that an email can be sent and received with the correct data.

**4.2.20 Notification Control**

Validation will be successful if the application notification settings can be set and then present notifications according to those settings.

**4.2.20.1 Notifications On/Off**

We will turn notifications on and set a series of alarms and events to see if they send notifications at the appropriate times. We will also turn notifications off and repeat the process to verify that notifications are not sent.

**4.2.20.2 Notification Method**

We will set notifications to alerts on multiple devices to see that they trigger accordingly. We will do the same for text messages and emails.

**4.2.21 Shared Calendar**

Validation will be successful if the user is able to share events from their individual calendars with other users.

**4.2.21.1 Shared Calendar Group Creation**

This feature will be verified by placing multiple users into a group and displaying the saved group on the group page.

**4.2.21.2 Send Shared Calendar Update Notification**

Will be validated by sending a notification and having it successfully recieved by each member in a group.

**4.2.22 Push Notifications**

Validation will be successful if push notifications are recieved.

**4.2.22.1 Recieve Push Notification**

Test notifications will be sent from multiple accounts on multiple devices to verify push notifications are working.

**4.2.23 Invitations**

Validation will be successful if invitations are recieved.

**4.2.23.1 Send Event Invitations**

Invitations will be sent from multiple accounts on multiple devices to verify Invitations are working.

**4.2.24 Simplified "To Do" assignment display**

Validation will be successful if the user is able to go to the Simplified "To Do" assignment page of the app, and view their assignments one at a time.

**4.2.24.1 Completing an assignment**

The Simplified "To Do" assignment display will be tested to make sure that when the button that marks an assignment as complete is pressed, that item will no longer show up on the "To Do" list.

**4.2.24.2 Navigating through assignments**

This will be verified by using the navigations buttons to cycle through the to do list, and make sure all items on the list are shown.

**4.2.24.3 Adding assignments to the list**

Adding items to the list will be tested by selecting the "add to my to-do list" button, and verifying their presence on the to do list.

**4.2.25 Continuous Calendar**

**4.2.25.1 Continuous Calendar Month View**

**4.2.25.2 Continuous Calendar Month Alternating Background Color**

**4.2.25.3 Continuous Calendar Month Label**

**4.2.26 Holidays**

**4.2.26.1 Labels for Holidays**

**4.2.26.2 Watermark on Holidays**

**4.2.27 Location**

**4.2.27.1 Event Location**

**4.2.27.2 Google Maps Integration**

**4.2.28 Apple Maps Integration**

Validation will be successful if apple device users can have locations that are in the calendar pulled up on Apple Maps.

**4.2.28.1 Support for Apple Maps on Iphone**

We will use an Iphone and see if calendar locations can be pulled up in Apple Maps.

**4.2.28.1 Support for Apple Maps on MAC computers**

We will use a MAC computer and see if calendar locations can be pulled up in Apple Maps.

**4.2.29 Other Maps Integration**

Validation will be successful if calendar locations can be pulled up in various map applications.

**4.2.29.1 Find a location**

We will test that calendar location can be pulled up in each of the different map applications, including: Here WeGo, Waze, MapFactor, Mapquest, Scout GPS, Maps.Me and InRoute.

**4.2.30 Video Tutorial**

Validation will be successful if we have a video, 10 minutes or less in length, that explains basic functionality for new calendar users. The video should cover how to create and edit a calendar item, how to use group events, and how to access different calendar views. The video should be displayed when a new user opens the application for the first time.

**4.2.30.1 Learning Application Capabilities**

We will test this by having a new user open the calendar, and verifying that the link to the tutorial video pops up. They will click the link, and after watching the new user will create a new calendar item, join a group event, and access different calendar views to verify that the tutorial was clear. If they fail then adjustment to the tutorial video is needed.

**4.2.31 Group Permissions**

Validation will be successful if the user can set restrictions and permissions within their groups.

**4.2.31.1 Group owners have access to all the groups resources**

This will be tested by creating a group and setting certain permissions. After those are set we will see if the group owner can still access all the resources in the group.

**4.2.31.2 Group members can be aware of what is happening in their group**

Validation will be successful when permissions are set and group is aware of those permissions given or set.

**4.2.32 Group Links**

Validation will be successful when third party technologies for group work are linked and accessed from the calendar.

**4.2.32.1 Group has a link to a collaborative tool**

When the link is used the group will be able to access the third party technologies preferred from the calendar.

**4.2.33 Sort & Filter**

Validation will be successful when calendar items are sorted or filtered based on details of the events on the calendar.

**4.2.33.1 Filter by class**

Calendar items can be filtered for and found based on the class they are listed under in the event.

**4.2.33.2 Sort by Time Length**

Calendar items can be filtered for and found based the time they need to be completed by.

**4.2.34 Personal Assistant**

**4.2.34.1 Assistant recommends an assignment that is due.**

**4.2.35 Feedback**

**4.2.35.1 User is notified of feedback on assignment.**

**4.2.35.2 Feedback is included in notification.**

**4.2.36 Group Security**

Verification is successful if a guest can only see an event after being invited by the host.

**4.2.36.1 Secured groups.**

A private group will be formed between various users. An uninvited user will attempt to view the event. The uninvited user will not see the event nor it's details.

**4.2.36.2 Group invitation.**

A host will create an event, then send various invites to guests so that they can access the event.

**4.2.37 Database for Account Usernames and Passwords**

Validation will be successful if the database contains all the users of the application stored in a secure manner.

**4.2.37.1 Verifying Existing Account**

A user will create a new account. The user will then login to their account with the credentials they created.

**4.2.37.2 Create New Account**

A user will create a new account. The account will be inserted into the database in a secure manner.

**4.2.38 Inspirational Quotes and Images**

Validation will be successful if the event has a designated area for the insertion of inspirational quotes and images.

**4.2.38.1 Enter quote text**

The user will add inspirational text to the designated area of the calendar event.

**4.2.38.2 Insert an inspirational image**

The user will add an inspirational image to the designated area of the calendar event.

**4.2.39 Adjustable Calendar/Calendar Item Size**

Validation will be successful if all user interface elements scale dynamically in size according to the window size.

**4.2.39.1 Mobile tilting functionality**

The user will rotate their phone horizontally, and the application will reorient into landscape mode.

**4.2.39.2 Desktop calendar item zooming**

The user hovers their mouse over an event or clicks and the details are presented in an enlarge interface.

**4.2.40 Share Calendar Application**

**4.2.40.1 Connect to Social Media**

**4.2.40.2 Share Calendar Application Through Social Media**

**4.2.40.3 Share Calendar Through Email**

**4.2.41 Weather**

The calendar should correctly display the predicted weather.

**4.2.41.1 Weather for Specific Days**

Should be able to click the weather section on the calendar and check the projected weather. Additionally when creating an event on a certain day the predicted weather should appear for that day as well.

**4.2.42 Tutor Integration**

Validation is successful when user clicks on link and is taken to the BYU-I tutor page.

**4.2.42.1 Schedule a Tutor**

When the user returns to the calendar after scheduling with their tutor on the BYU-I page then the calendar should open a window so the user can put their tutor session in as an event.

**4.2.43 School Functions**

School functions list should update as BYU-I updates their list of School events. If the school has not updated then it should pull the current list and should appear the same on the calendars list of School Functions.

**4.2.44 Printing**

Validation is successful when highlighted part of calendar chosen by the user is correctly printed out.

**4.2.45 Badges**

When the user needs to be notified of events, deadlines, group work or messages then badges should show up with the correct count of any of the above that have not been seen by the user. Additionally when the user goes through the badges the count should decrease as the badges are seen. If they have all been seen then that badge should disappear.

**4.2.46 Quick Access**

When the quick access button is clicked the system needs to redirect to I-Learn's main page. This process has to be significantly faster than the normal I-Learn login process.

**4.2.46.1 Quick Access Class Selection**

The User can select a class to go directly to from the app. Once again this process has to be faster than the normal process.

**4.2.47 Assignment Alarm**

The Assignment alarm feature needs to be precise and go off at the correct time.

**4.2.47.1 Setting the Assignment Alarm**

The alarm set by the user has to go off at the exact time the user specifies.

**4.2.48 Share**

The user will be able to go to a calendar on social media and have the calendar app sync with the specified calendar.

**4.2.48.1**

The calendar app is able to import events from an existing calendar from a social media site.

**4.2.49 Sync and Success Share**

Use a compatible site and the app itself to test the sync and success feature. The calendar app has to be able to be updated from these compatible sites. The calendar app also needs to be able to share a success on social media.

**4.2.49.1 Enable Synchronization with I-Learn**

The app can be synced with ILearn and automatically pull in the users assignments.

**4.2.49.1 Google Chrome Addon add to Calendar**

The app can have items added to it by the user highlighting them right clicking and selecting add to my calendar. The user will have to pick a date to add the item to.

**4.2.49.2 Google Chrome Addon remind about upcoming deadline**

A notification will pop up to let the user know that an upcoming deadline is approaching.

**4.2.49.1 Share success to Google Plus**

The app can send a success that the user had to google plus.

**4.2.49.1 Share success to Facebook**

The app can send a success that the user had to Facebook.

**4.2.50 Priority Assignments**

The assignments set as priority are quicker to identify then the normal assignments.

**4.2.50.1 Priority**

An assignment can be set as a priority and then unset.

**4.2.51 Google API**

The calendar app is able to sync with a Google calendar.

**4.2.51.1 Sync Google Calendar**

The calendar app correctly syncs with the selected Google calendar.

**4.2.52 Apple API**

The calendar app is able to sync with an Apple calendar

**4.2.52.1 Sync Apple Calendar**

The app correctly syncs to an Apple calendar

**4.2.53 Outlook API**

The calendar app is able to sync with an Outlook calendar.

**4.2.53.1 Sync Outlook Calendar**

The calendar syncs to the selected Outlook calendar.

**4.2.54 Toolbox Bar**

When the app is open the toolbox bar is present in the app.

**4.2.54.1 Search Bar**

The tool box bar will have a search bar and it must be able to search for various items in the calendar app.

**4.2.54.2 Timer**

After the timer function is selected the app displays the time left to complete the assignment.

**4.2.54.3 Assignment Progress Bar**

After the assignment process bar is selected the app displays the user�s assignment progress.

**4.2.54.4 Suggest Meeting Times**

When this function is selected and associates calendars are checked the app will display the best times for the group to meet.

**4.2.55 Twitter**

When the app is open and the user clicks the 'Share' button, the Twitter button is one of the options they can share their thoughts/assignments on.

**4.2.55.1 Twitter**

User is successfully able to share what they wanted to from the app via tweet.

**4.2.56 Instagram**

Validation will be successful if the user can successfully share an image from the app via Instragram.

**4.2.56.1 Instagram**

We will use an Instagram account to verify that information from our app is sent and posted to the Instragram account.

**4.2.57 Custom Images and Icons**

Validation will be successful if the user can upload custom images and they are displayed successfully to the app.

**4.2.57.1 Custom Images and Icons**

We will use multiple custom images and icons to verify this users can use their custom images to personalize their app.

**4.2.58 Custom Videos**

Validation will be successful if the user is first prompted to allow the app camera permissions. Then if the app displays custom videos successfully, it has been succesfully validated.

**4.2.58.1 Custom Videos**

We will use several custom videos to verify that users can use their own custom videos.

**4.2.59 ToDo Task Engine**

Validation will be successful if the user can view their To-Do list and see what they have planned for their calendar.

**4.2.59.1 Calendar Task & ToDo Engine**

We will use several tasks, events, and notifications to verify the ToDo Engine is working, displaying, and updating properly.

**4.2.60 Calendar View**

Validation will be success if the application loads the user's personal calendar style.

**4.2.60.1 Various Calendar Views**

We will test each calendar view, to verify the user can use each view successfully when viewing their own calendar.

**4.2.61 Task Rewards**

Verification will be successful task points are awarded succesfully for completing tasks.

**4.2.61.1 Goal/ XP bar**

We will use several task assignments to verify that task points are awarded correctly for completing assignments.

**4.2.62 User Task List**

Validation will be successful if all tasks are listed correctly in task list view.

**4.2.62.1 Assignment List**

We will use several assignments to verify that tasks are loaded correctly into the task list view.

**4.2.63 School Catalog**

**4.2.63.1 View School Catalog**

**4.2.64 Class Help**

**4.2.64.1 Help with class**

**4.2.65 Travel Time**

**4.2.65.1 Travel Time**

**4.2.28 Feature Name?**

**4.2.28.1 Night Mode**

**4.2.28 Feature Name?**

**4.2.28.1 xxxxxxxxxx**

**4.2.28 Feature Name?**

**4.2.28.1 xxxxxxxxxx**

**4.2.28 Feature Name?**

**4.2.28.1 xxxxxxxxxx**

**4.2.70 Non-SSO**

Validation will be successful if application is able to provide the user with calendar functionality beyond that of the log in screen.

**4.2.70.1 Non-SSO Log In**

We will access the calendar from multiple devices and browsers to verify that a log in is required each time.

**4.2.70.2 Non-SSO Log Out**

We will log out from multiple devices and browsers to verify that logging out is required in each case.

**4.3 Validate Usability Requirements**

Gathering a group of 20 users, the usablilty requirements will be validated by having each of them successfully add, modify, and remove an assignment.The users must also successfully add, modify, and remove an event item. Finally, the users must be able to navigate between the main calendar view, daily calendar view, to-do list, and help menu.

**4.4 Verify Performance Requirements**

Authors / Editors please SEE: <https://msdn.microsoft.com/en-us/library/bb924357.aspx> <https://www.radview.com/blog/4-types-of-load-testing-and-when-each-should-be-used/> <http://www.softwaretestinghelp.com/what-is-performance-testing-load-testing-stress-testing/>

**4.4.1 Load Testing**

**4.4.2 Stress Testing**

**4.4.3 Capactiy Testing**

**4.5 Verify Logical Database Requirements**

The logical database requirements will be verified by using the Calendar Assignments, Calendar Events, and Users relational tables as defined in section 3.5 to successfully store information from the I-learn system and retrieve the data for displaying user assignments and events on the Student Calendar. The tester will create a new assignment and event within the application which will be saved to the database. The tester will then log off of the application and sign back in to verify that the items where stored and retrieved successfully.

**4.6 Verify Design Constraints**

To verify the application meets web platform design constraints, the tester will use multiple web browser clients to verify that the application operates within the browser. The tester must successfully use the application in the Goolge Chrome, Mozilla Firefox, and Safari web browsers. The system will be verified that it fulfills FERPA and ADA standards of compliance.

**4.7 Verify Software System Attributes**

Availability: Verification will be successful when the testers demonstrate that the system is able to operate online and will be available to users at any moment while it is running.

Correctness: Verification will be successful when the system displays all assignments and events in their proper date and time slots. The tester will be able to select group members and verify that contact information is correct.

Maintainabililty: Verification will be successful when the tester is able to make a modification and add it to the system while it is running.

Security: Verification will be successful when the system meets FERPA standards of compliance.

**5.0 Appendices**

**5.1 Assumptions and Dependencies**

**5.2 Acronyms and Abbreviations**

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