

Express²

Project Express² Quality Assurance Document

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1. Automatic Unit Testing

Team X.I.S will not be using automated unit testing during the development of the iPhone application, Express². The Phrase Library and Main Menu are both small menus which will be more easily tested manually. The Password Screen and Change Password only have two cases. In the Password Screen, either the Guardian has correctly input their 4-digit password, or they have entered it incorrectly. For the Change Password Screen, either the Guardian has correctly input their original password and entered a new password in the 4-digit format, or they have failed to correctly establish either one. The error handling and testing of these features will be done by manually since the edge cases are few in number. The Name, Allergies and Emergency Contact text fields of the Settings Screen pose a concern about the length of strings once displayed as it may break formatting. This aspect will not need any kind of automated testing. The text input from the Guardian, for the Addresses in the Settings Screen, will be transferred to the Google Maps API, whereby any error handling will be performed there rather than in Express². The Error Report will be done through the iOS default email client where the Guardian will be only entering text. In general, there are not enough cases to justify the need for automated testing.

2. Internal Testing Deadlines

Version	Feature	Test Dates
1	Main Menu	Thursday, Oct. 18th
1	Phrase Library	Saturday, Oct. 20th
1	Emergency Information	Saturday, Oct. 20th
1	Options screen	Saturday, Oct. 20th
1	Settings Menu	Sunday, Oct. 21th
1	Tutorials screen	Saturday, Oct. 20th
2	Initial Setup	Saturday, Nov. 10th
2	Phrase Library Audio	Saturday, Nov. 10th
2	Emergency Info: Home/School Addresses	Saturday, Nov. 10th
2	Options: Password Lock	Wednesday, Nov. 7th
2	Options: Password Lock Error Messaging	Wednesday, Nov. 7th
2	Options: Change Password	Saturday, Nov. 10th

2	Options: Change Password Error Messaging	Saturday, Nov. 10th
2	Options: Error Reports	Saturday, Nov. 10th
2	Options: Error Reports Error Messaging	Saturday, Nov. 10th
2	Settings Menu	Sunday, Nov. 11th
2	Settings: Saving Error Messaging	Sunday, Nov. 11th
3	Emergency Info: Home/School Addresses	Saturday, Nov. 24th
3	Settings Color Preferences	Saturday, Nov. 24th
3	Button Graphics	Saturday, Nov. 24th
3	Tutorial Videos	Saturday, Nov. 24th

3. User Acceptance Testing

Team X.I.S will only be doing User Acceptance Testing for the first and last versions. These tests will be conducted with Myra Zwiep, a teenager who has Down syndrome. The first version will be tested to find out if the menu format works for the User (i.e. navigation, feedback, interface size, logic of the layout, etc.). The last version will be tested to see if the final product functions as desired when in the hands of the User (i.e. Can they actually find the phrases/functions they're looking for, etc.). Version 2 will only add a minor amount of functionality for the maps and for the Guardian profile feature(s), therefore User Acceptance Testing is unnecessary.

First User Acceptance Testing: Tuesday, October 16th

Testing Questionnaire Outline:

Q: Does the menu operate intuitively for the User?

Show the User the applications menu and ask them to play around with the functionality.

Q: Are the navigation functions (Back and Home) easily understood by the User?

Ask the User to navigate back and to the home page.

Q: Are the menus easy enough to navigate for the User?

Ask the User to navigate to specific menu options (i.e. "Press 'Food'", or "Find where they think 'I would like to have a drink, please.'" is located).

Final User Acceptance Testing: Wednesday, November 21st

Testing Questionnaire Outline:

Q: Are the pictures and words chosen for the phrase menus easily understood by the User?

Ask the User what they think each menu option means and what their final phrase would be.

Q: Do the phrases make sense to the User?

Ask the User what each of the phrases mean.

Q: Does the User feel the themes are appropriate for their age level?

Show the User the different visual themes and ask them which one they would prefer.

Q: Does the User feel that they prefer having buttons with pictures or without?

Show the User the buttons with and without pictures and ask them which one they would prefer.

Q: Does the User understand how the map feature works?

Ask the User to show where they live using the application.

4. Integration Testing

Version 1

The Main Menu will be implemented and tested first, and then each of the minor features will be added to the Main Menu. The first feature implemented will be integrated into the tested Main Menu in order to test for consistency. The remaining features will follow suit, as they will be integrated to the tested features before being tested altogether.

Version 2

The Password lock feature will be implemented and tested within version 1. The Password Change feature will be added to the tested materials before being tested altogether. As long as the testing is successful, the other features will be implemented arbitrarily. They will be integrated and tested as a whole in order to ensure the functionality of the system.

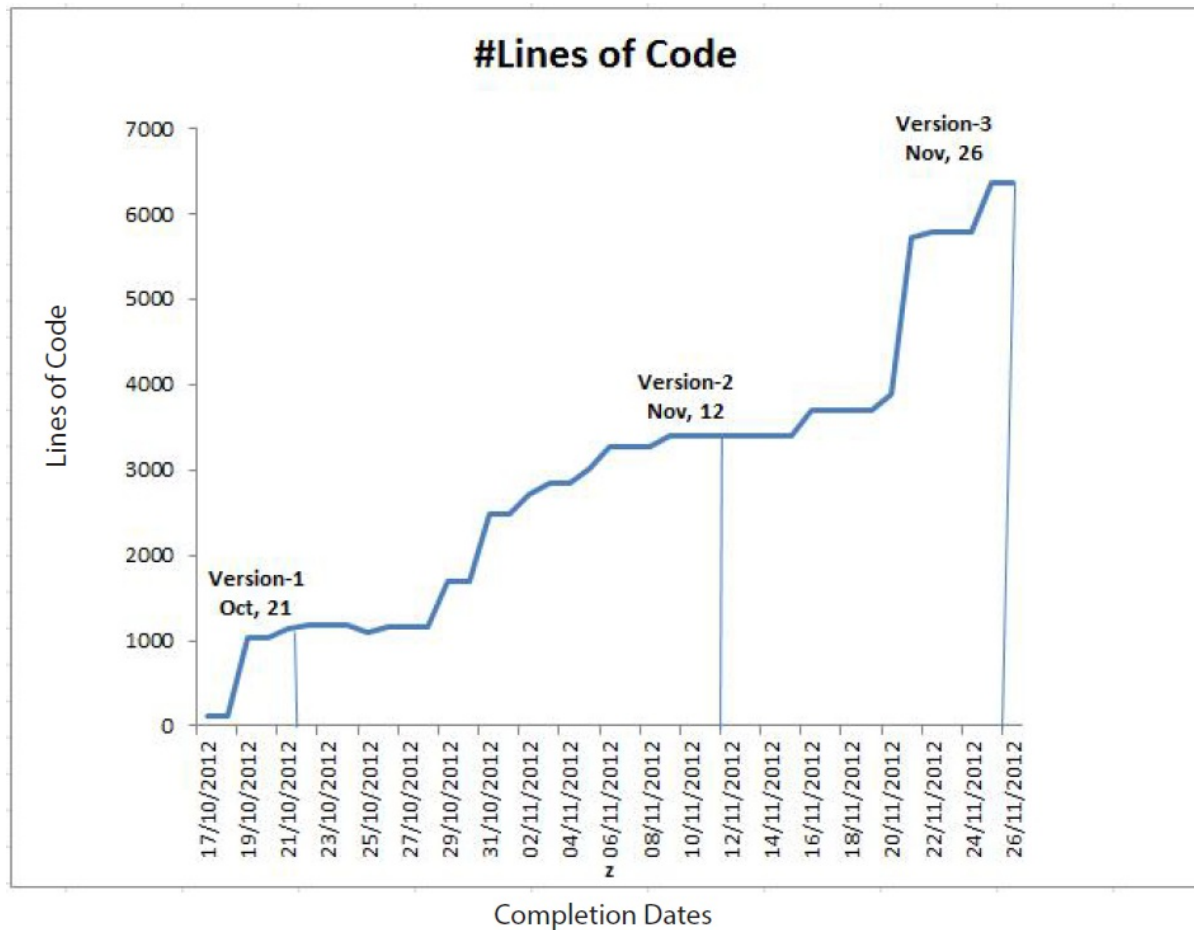
Version 3

The Error Report feature will be implemented and tested within version 2. This version will focus on the Error Detection feature for the Error Report which will be implemented and tested based upon verification of the encompassing features. The remaining features will be then added and tested to finalize the integration testing.

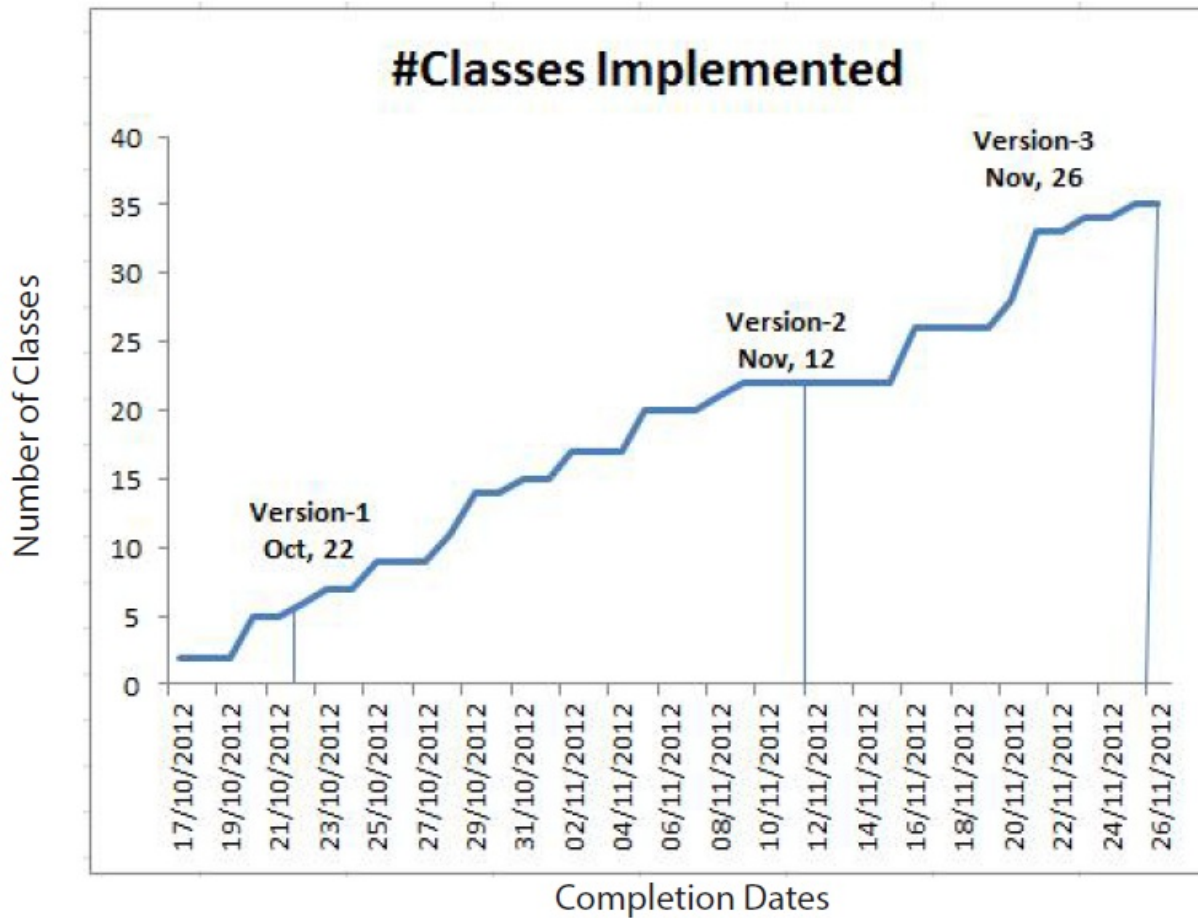
5. Software Tools/Metrics

During development, Team X.I.S will be using the following Software Tools to document the software metrics of Express²:

Software and Type	Relevance Description
Xcode <i>Development Tool</i>	For developing source code.
GitHub <i>Version Control Tool</i>	Manages and stores varied versions of project source code.
Team X.I.S Wiki <i>Documentation Tool</i>	A central location that displays and stores project documentation.
www.Flockdraw.com <i>Development Tools</i>	Aids for communication. Used remotely to discuss diagrams related to application development.
MS Office, Adobe Photoshop <i>Overall Documentation Tools</i>	For development of documentation and accompanying diagrams.



Graph 5-A. This graph shows the lines of code gained over time during the development of Express² up until Version 2.



Graph 5-B. This graph shows the class development for Express² up until Version 2.

6. Other Project Quality Assurance

Team X.I.S will be taking numerous measures for quality assurance of Express². The team will be consulting with Susan Fawcett, a Speech Pathologist at DSRF (Down Syndrome Research Foundation) and the parent of a down-syndrome child. Additional research on Xcode and Objective-C functionality will be done to find efficient methods of fulfilling the applications requirements.