

Language Learning App Requirements



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[Individual Functionality \[IF\]](#)

- IF 1. Teacher Substitute
 - IF 1.1 Repeating phrases
 - IF 1.1.1 Accurately translating phrases
- IF 2. Proficiency Testing
 - IF 2.1 Linked to profile
 - IF 2.1.1 Status and progression
 - IF 2.1.2 Places of improvement / gaps in learning
 - IF 2.1.3 A colorful GUI for progression (See [UI 1.1](#))
- IF 3. “Teacher Mode”
 - IF 3.1 Repetition of phrases
 - 3.1.1 Determined by backbone software (See [DF 2](#))
- IF 4. “Game Mode”
 - IF 4.1 Card identifier game
- IF 5. “Peer-to-Peer” Mode**
 - IF 5.1 Top time added the the user profile**
 - IF 5.2 Other users able to see and compare scores**
 - IF 5.3 Semblance of a leader bored with friends**
- IF 6. Intro Mode**
 - IF 6.1 This mode is a guided tour when the app is first opened**
 - IF 6.1.1 Suggests features and functionalities**

Business Flow [BF]

- BF 1. Monetizable through multiple versions
 - BF 1.1 Freemium
 - BF 1.1.1 Monetizable through ads
 - BF 1.2 Lite Version
 - BF 1.2.1 Paid version, limited features
 - BF 1.3 Trial Version
 - BF 1.3.1 A free limited time access to the full version
 - BF 1.4 Full Featured Version
 - BF 1.4.1 A version with all the features of the app
 - BF 1.4.2 A subscription model vs a one time payment model
- BF 2. Age Range
 - BF 2.1 All Ages
 - BF 2.1.1 Mainly targeted towards the high school / college age
 - BF 2.1.2 Also appealing to mature younger ages
- BF 3. Long Term Support
 - BF 3.1 Bug Report

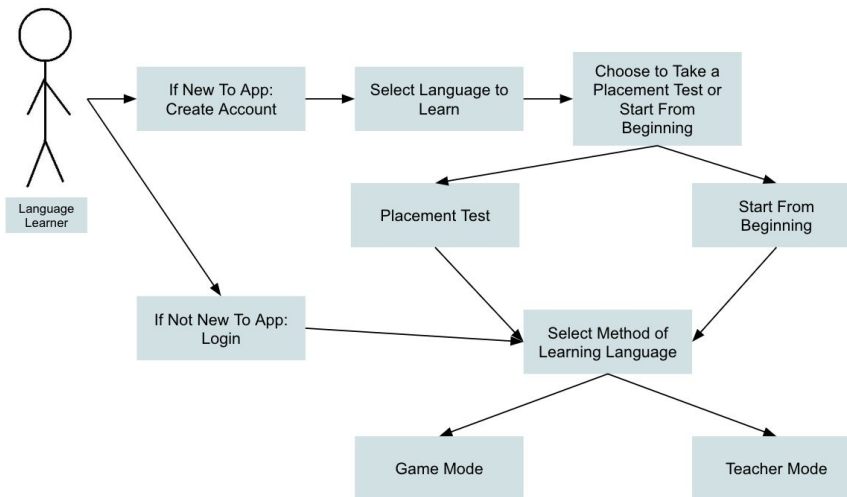
- BF 3.1.1 Customer is able to report bugs via email
- BF 3.1.2 Customer is able to report bugs via phone call
- BF 3.1.2 Support representatives assist the customer via phone or email
- BF 3.2 Bug Collect
 - BF 3.2.1 Support representatives identify the bug
 - BF 3.2.2 If the bug is a functional issue that needs to be patched, it will be patched in the next update.
- BF 3.3 Release Cycle
 - BF 3.3.1 Major content update every month (See [FC 1](#))
 - BF 3.3.2 Update as soon as possible if there is severe functional problem
 - BF 3.3.3 Updates on normal functional problems will be released every 3-4 weeks.

Data and data format [DF]

- DF 1. Large user base
- DF 2. Licensing of translation / verbal software
- DF 3. Multi-language support (EFIGS)
 - DF 1.1 English
 - DF 1.2 French
 - DF 1.3 Italian
 - DF 1.4 German
 - DF 1.5 Spanish
- DF 4. Login information systems
 - DF 4.1 Keep track of individual profiles
 - DF 4.2 Profile customizability
 - DF 4.3 Profile progress tracking
 - DF 4.4 Profile data storage (See [IS 1.1](#))
 - DF 4.5 Ability to see stats from other people's profiles as a whole
- DF 5. UI Base language integration
 - DF 5.1 R&D into language customs and readability
 - DF 5.2 Separate development of UI language formatting (See [IS 2](#))
 - DF 5.3 Confirmation of readability by native speakers (See [IS 2](#))
- DF 6. Variable implementation of UI language formatting
 - DF 6.1 UI language set based on the embedded OS language type

User Interface [UI]

- UI 1 Storyboard / Mockups



UI 1.1. The look should appeal to main age group (See [BF 2.1.1](#))

UI 1.1.1 Color scheme should match the logo (See [UI 3.1](#))

UI 1.2 Basic Course of Action

UI 1.2.1 A user wants to learn a new language.

UI 1.2.2 The user creates an account.

UI 1.2.3 The user selects which language they would like to begin learning from the list of available languages.

UI 1.2.4 The user selects to take a placement test or to just begin learning selected language from the beginning.

UI 1.2.5 After taking the placement test or simply choosing to start from the beginning, the user selects the method of learning they would like to participate in: Game Mode or Teacher Mode.

UI 1.2.6 The user uses Game Mode or Teacher Mode as long as they like.

UI 1.3 Persona

UI 1.3.1 Sarah is a college student in her early 20's who is hoping to travel to France this next summer. She studied French in high school for a couple years but is a little rusty. She wants to be able to communicate with the locals while she's there. Sarah already knows English. She uses her smartphone often.

UI 1.3.2 Bob and his wife Margaret have signed up to host an Italian exchange student for the next school year. All their children have gone off to college so they miss having kids around the house. Although the student is supposed to speak decent English, they both want to learn some Italian words and phrases in hopes to make their exchange student feel welcome and to be able to communicate in more than just English if needed.

UI 2. Platform

UI 2.1 Mobile

UI 2.1.1 On the go

UI 2.1.2 Easy to use, intuitive at a glance

UI 2.1.3 More ease of use than learning in a classroom

UI 2.2 Web-application*

* focus on mobile integration, web-application will be discussed at a later time.

UI 3. Name: Language Learning Application (LLA)

UI 3.1 Logo development

UI 3.1.1 Logo Approval

UI 3.1.2 Logo Integration into internal documents / app resources

UI 4. Profile Development

UI 4.1 Profile look / feel

UI 4.1.1 Uniformity / ability to customize

UI 4.1.2 The ability to see other profiles and proficiency / scores.

UI 4.2 Use-Case Documentation

UI 4.2.1 Person: Someone who wants to learn a second language.

UI 4.2.2 Preconditions: One language is already known, user is familiar with using a electronic device, user wants to learn a language that is available on the application.

UI 4.2.3 Postconditions: User will become semi-fluent in a second language, and hopefully overtime they will become fully-fluent.

UI 5. User Interface Language differences (See [DF 5](#))

Interface to Systems [IS]

IS 1. Event-Driven

IS 1.1 Mainly event-driven, as it is a GUI application.

IS 2. Back end servers

IS 2.1 Profiles kept on designated servers

IS 2.2 Reduced redundancy, as a cost saving measure

IS 2.3 Standard security

IS 2.4 User base size considerations (See [DF 1](#))

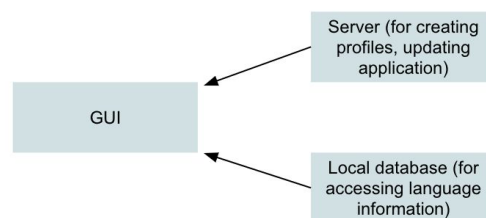
IS 2.5 User profiles encryption

IS 3. Development of Language user development

IS 4. Local Database

IS 4.1 Used to store information regarding various languages.

IS 4.2 Used to store all words, phrases, sentences, grammar, etc.



Further Constraints [FC]

FC 1. Multiple Languages

FC 1.1 Differing language bases (e.g. Romantic vs. Indo-European)

FC 1.1.1 These constraints are future updates to app

FC 1.2 Greater Future Language Support

FC 1.2.1 Hebrew

FC 1.2.2 Korean

FC 1.2.3 Japanese
 FC 1.3 Pop culture feature
 FC 1.3.1 English pop culture support
 FC 2. Security (See [IS 2.5](#))

Test Plan

Test No.	Depends On	Use Case	Ref.	Preconditions	Test Steps	Postconditions
T-1: Profile Creation						
T1.1	(None)	Ensure that user can successfully open app once downloaded from app store.	UI 2.1	1) The user has internet connection. 2) The user has a compatible device for download. 3) The user has enough local storage on the device.	1) The user is able to download the app successfully. 2) The user is then able to open the app into a stable environment.	1) The user has a copy of the downloaded app.
T1.2	T1.1	Ensure that user enters a first name		1) The user has successfully downloaded the app. 2) The user has internet connection.	1) The user taps on the first field. 2) The user inputs a valid first name.	1) The user populates the first name field.
T1.3	T1.1	Ensure that the user enters a valid first name, with no numbers or invalid symbols		1) The user has successfully downloaded the app. 2) The user has internet connection.	1) The user taps on the first name field. 2) The user inputs any character that is not a valid character. 3) The text field highlights in red, prompting an error message, instructing the user to input a valid first name.	1) The user is prompted to change the first name to a valid name.
T1.4	T1.1	Ensure that user enters a last name		1) The user has successfully downloaded the app. 2) The user has internet connection.	1) The user taps on the last name field. 2) The user inputs a valid last name.	1) The user populates the the last name field.
T1.5	T1.1	Ensure that the user enters a valid last name, with no numbers or invalid		1) The user has successfully downloaded the app. 2) The user has internet connection.	1) The user taps on the last name field. 2) The user inputs any character that is not a valid character. 3) The text field highlights	1) The user is prompted to change the last name to a valid last name.

		symbols			in red, prompting an error message, instructing the user to input a valid last name.	
T1.6	T1.1	Ensure that user enters a valid email address.		1) The user has successfully downloaded the app. 2) The user has internet connection.	1) The user taps on the email field. 2) The user enters in an email that is valid syntax.	1) The user populates the email field, ensuring that it is a valid email.
T1.7	T1.1, T1.2, T1.3, T1.4, T1.5, T1.6	The user can log in with all the proper login fields populated		1) The user has successfully downloaded the app. 2) The user has internet connection.	1) The user hits accept, or the return button. 2) The user is logged in.	1) The user is able to log into the app.
T1.8	T1.1, T1.2, T1.3, T1.4, T1.5, T1.6 (With one or more of these missing)	The user cannot log in with not all the proper login fields populated		1) The user has successfully downloaded the app. 2) The user has internet connection.	1) One or more of the population fields are not filled out properly. 2) The user presses the enter button. 3) The user is sent an error message prompting them to fill out the fields properly.	1) The user is unable to log into the app.
T-2 Login/ Logout						
T2.1	T-1 [The user has created an account]	Ensure that when a user wants to log in, a valid email address is recognized.		1) The user has entered a valid email address. 2) The user has internet connection.	1) The user taps on the email field. 2) The user enters in a valid email. 3) The user hits the next button. 4) App recognizes the email and allows user to enter the password.	1) App recognizes the email and allow user to enter the password.
T2.2	T-1 [The user has created an account]	Ensure that when a user wants to log in, an invalid email address / password is rejected and an error message is displayed.		1) The user has entered an invalid email address. 2) The user has internet connection.	1) The user taps on top on the email field. 2) The user enters in an invalid email address. 3) The system reject the email address then let the user enters it again.	1) The system rejects the email address then let the user enters it again.

T2.3	T-1 [The user has created an account]	Ensure that when a user wants to log in, a valid password/ email is recognized, and message is prompted		1) The user has entered a valid email address. 2) The user has entered a valid password. 3) The user has internet connection.	1) The user taps the password field. 2) The user enters an valid password. 3) The system recognizes the password and allow user to login to the app.	1) The system recognizes the password and allow to login to the app.
T2.4	T-1 [The user has created an account]	Ensure that when a user leaves and returns to the app, the user is logged in and profile data is consistent.		1) The user has created a valid account previously.	1) The user exits and returns to the application.	1) The user is automatically prompted with either teacher or game mode inside their account.
T2.5	T-1 [The user has created an account]	Ensure that when a user logs in on a different device, profile information is consistent.		1) The user has created a valid account previously. 2) The user has internet connection.	1) The user enters the application and navigates to the login page. 2) The user enters their account information.	1) The user is logged in and proficiency and other account information is as they left it.
T2.6	T-1 [The user has created an account]	Ensure that a user can properly log out.		1) The user is inside the app. 2) The user is inside a verified account.	1) The user navigates to their profile. 2) The user navigates to the "logout" button. 3) The user taps "log out."	1) The user is prompted with the login screen, as that is the only screen available to those without accounts.
T-3 Setup						
T3.1	T-1 [The user has created an account]	Ensure that a certain language can be properly selected.	DF 3	1) The user is in the app and is in the process of setting up their account.	1) The user taps the desired language.	1) Positive feedback is given and the next question is prompted.
T3.2	T-1 [The user has created an account]	Ensure that when a language is selected it is properly reflected in app activity.	DF 3	1) The user is in the app and is in the process of setting up their account.	1) The user taps the desired language.	1) The selected language is properly reflected in the learning sections of the app.

T3.3	T-1 [The user has created an account]	Ensure that when the user chooses to start from the beginning, learning from square one begins.		1) The user is in the app and is in the process of setting up their account.	1) The user selects "start from the beginning."	1) The user is prompted to choose between teacher mode and game mode, and in whichever one they choose, learning begins at square one.
T3.4	T-1 [The user has created an account]	Ensure that when the user chooses to take a placement test, a placement test begins.		1) The user is in the app and is in the process of setting up their account.	1) The user selects "take placement test."	1) The user is prompted questions to accurately test current proficiency.
T3.5	T-1 [The user has created an account]	Ensure that a placement test accurately recognizes the user's level of proficiency in the selected language.		1) The user is in the app and is in the process of setting up their account. 2) The user has chosen to take a placement test.	1) User answers questions within a teacher-mode like setting.	1) Proficiency is calculated based off which questions they are answering correctly and incorrectly as well as how quickly the correct answer is chosen.
T-4 Teacher Mode						
T4.1	T-1 [The user has created an account]	Ensure that Teacher mode can be enabled		1) The user is in the app.	1) User navigates to the home page. 2) The user selects "teacher mode."	1) The user is in teacher mode.
T4.2	T-1 [The user has created an account]	Ensure that when a multiple choice question is prompted, there is exactly one correct answer.	IF 3	1) The user is in the app and in teacher mode.	1) In teacher mode, the user chooses an answer to a question. 2) While the user continues to choose incorrect answers, the question is prompted again. 3) The user selects the correct answer to the question.	1) The user is able to continue on to the next question.

T4.5	T-1 [The user has created an account]	Ensure that when a multiple choice question is answered correctly the user is made obviously aware.	IF 3	1) The user is in the app and in teacher mode.	1) In teacher mode, the user chooses the correct answer to a question.	1) The user receives positive feedback. 2) The next question is prompted.
T4.6	T-1 [The user has created an account]	Ensure that when a multiple choice question is answered correctly proficiency increases.	IF 3	1) The user is in the app and in teacher mode.	1) In teacher mode, the user chooses the correct answer to a question.	1) The proficiency bar at the bottom of the screen grows and the internal state keeping track of the proficiency level increases.
T4.7	T-1 [The user has created an account]	Ensure that when a multiple choice question is answered incorrectly, the user is made obviously aware and the question is prompted until the correct answer is chosen.	IF 3	1) The user is in the app and in teacher mode.	1) In teacher mode, the user chooses the incorrect answer to a question multiple times over. 2) The user then chooses the correct answer to the question.	1) Negative feedback is received and the question is reprompted. 2) When the user finally answers correctly, positive feedback is received and the next question is prompted.
T4.8	T-1 [The user has created an account]	Ensure that when a multiple choice question is answered incorrectly, proficiency does not increase.	IF 3	1) The user is in the app and in teacher mode.	1) In teacher mode, the user chooses the incorrect answer to the question.	1) Negative feedback is received and the proficiency bar at the bottom of the screen does not change.
T4.9	T-1 [The user has created an account]	Ensure that when a phrase repetition question is prompted, the user is able to	IF 1.1 , IF 3	1) The user is in the app and in teacher mode.	1) In teacher mode, the user is able to tap record, record something, and then stop recording.	1) Feedback is given based off accuracy of repeated recording.

		record something.				
T4.10	T-1 [The user has created an account]	Ensure that when a phrase is repeated correctly, the user is made obviously aware and proficiency levels increase.	IF 1.1 , IF 3	1) The user is in the app and in teacher mode.	1) In teacher mode, the user is able to tap record and record the correct repetition of a phrase.	1) Positive feedback is given, proficiency levels increase, and the next question is prompted.
T4.11	T-1 [The user has created an account]	Ensure that when a phrase is repeated incorrectly, the user is made obviously aware and proficiency levels do not increase.	IF 1.1 , IF 3	1) The user is in the app and in teacher mode.	1) In teacher mode, the user is able to tap record and record an incorrect repetition of a phrase.	1) Negative feedback is given and the question is prompted again. Proficiency levels do not increase.
T4.12	T-1 [The user has created an account]	Ensure that when a phrase is repeated incorrectly, the question is prompted until a correct repetition is recorded.	IF 1.1 , IF 3	1) The user is in the app and in teacher mode.	1) In teacher mode, the user incorrectly records something multiple times over.	1) The question is prompted until the repetition is done correctly.
T-5 Game Mode						
T5.1	T-1 [The user has created an account]	Ensure that game mode can be properly selected.	IF 4	1) User is inside the application.	1) User navigates to screen where game mode is an option. 2) User clicks "game mode."	1) Game mode is entered.
T5.2	T-1 [The user has created an account] T5.1	Ensure that a user can properly select a card.	IF 4.1	1) User is inside game mode.	1) User clicks on a card.	1) Card is flipped over and hidden side is revealed.

T5.3	T-1 [The user has created an account]	Ensure that a user can properly select multiple cards at a time.	IF 4.1	1) User is inside game mode.	1) User clicks on a single card, then a second card.	1) First card is flipped over and hidden side is revealed. 2) Second card is flipped over and hidden side is revealed.
T5.4	T-1 [The user has created an account]	Ensure that after selecting two matching cards, positive feedback is given.	IF 4.1	1) User is inside game mode.	1) User selects two matching cards.	1) Positive feedback is given. 2) Cards stay flipped over.
T5.5	T-1 [The user has created an account]	Ensure that after selecting two cards that do not match, negative feedback is given.	IF 4.1	1) User is inside game mode.	1) User selects two cards that do not match.	1) Negative feedback is given. 2) Cards flip back over.
T5.6	T-1 [The user has created an account]	Ensure that after all cards have been properly matched, game ends.	IF 4.1	1) User is inside game mode.	1) User matches all cards.	1) Positive feedback is given. 2) Game mode is exited.
T-6 Monetizable Options						
T6.1	T-1 [The user has created an account]	Ensure that a user is able to view their current version status (ex. Free Version, Lite Version, Trial Version, Full Featured Version).	BF 1	1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account.	1) The user is able to scroll down to see the profile current version 2) The user is able to tap on the version, and expand it into different options 3) If none are chosen, the user is taken back to the profile screen	1) The user is left at the current screen.
T6.2	T-1 [The user has created an account] T6.1	Ensure that a user is able to switch to a different kind of version.	BF 1	1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into	1) The user navigates to their profile. 2) The user clicks on a "change version type" button.	1) The user's game version is what they want it to be.

				account.	3) The user selects which type they'd like to subscribe to.	
T-7 Profile Customizability						
T7.1	T-1 [The user has created an account]	Ensure that a user is able to view their profile.	DF 4.1	1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account	1) The user taps on the profile button in the top right corner.	1) The profile information is presented to the user.
T7.2	T-1 [The user has created an account]	Ensure that a user is able to view their proficiency level via their profile.	IF 2.1.1 , IF 2.1.2 , DF 4.3	1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account.	1) The user is able to see a quick view of the progress. 2) The user can tap on the proficiency level to expand and see more detailed information on progress.	1) The user is navigated to the proficiency page. 2) The user sees accurate proficiency information.
T7.3	T-1 [The user has created an account]	Ensure that a user is able to view their profile picture.	DF 4.1	1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account.	1) The user is able to see the profile picture in the profile screen. 2) The user can navigate to the profile picture and tap on it, which expands it into a bigger picture. 3) The user has button options to change photo or delete photo. 4) option: If the user taps anywhere else other than the buttons or photo, the user is taken back to the profile screen.	1) The user sees an expanded version of their profile picture.
T7.4	T-1 [The user has created an account] T7.3	Ensure that a user is able to change their profile picture by choosing a photo from their camera roll.	DF 4.2 , UI 4.1.1	1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account.	1) The user is able to tap on the change profile button at the bottom of the screen. 2) The user is prompted into the camera roll. 3) The user chooses a photo in camera roll.	1) The profile picture is updated to reflect the changed option. 2) The user is taken back to the profile screen.

T7.5	T-1 [The user has created an account] T7.3	Ensure that a user is able to remove their profile picture and have it set to the default photo.	DF 4.2 , UI 4.1.1	1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account.	1) The user is able to tap on the delete photo button on the bottom of the screen.	1) The user is taken back to the profile screen. 2) The profile is updated with one of the default profile photos.
T7.6	T-1 [The user has created an account]	Ensure that a user is able to view their name on their profile.	DF 4.1	1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account.	1) The user navigates to their profile.	1) The user is able to see the accurate profile name.
T7.7	T-1 [The user has created an account]	Ensure that a user is able to edit or remove their name on their profile.	DF 4.2 , UI 4.1.1	1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account.	1) The user taps on the name. 2) The user is prompted to change the name. 3) The user is able to tap on the name field, and edit the name with a keyboard. 4) The user taps on the accept button, or hits enter on the keyboard.	1) The user is taken back to the profile screen. 2) The profile has an updated name in the profile.
T7.8	T-1 [The user has created an account] T7.7	Ensure that when a user attempt to edit their name only letters are accepted.		1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account.	1) The user inputs a non-acceptable input.	1) The user is prompted to change the input in the name field. 2) If the user exits before changing, the original name is still saved.
T7.9	T-1 [The user has created an account]	Ensure that a user is able to view their connected email address on their profile.	DF 4.1	1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account.	1) The user navigates to their profile. 2) The user navigates to where the email address is displayed on their profile page.	1) The profile is showing the used email.
T7.10	T-1 [The user has created an account]	Ensure that a user is able to edit their connected email address on their profile.	DF 4.2 , UI 4.1.1	1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account.	1) The user taps on the email. 2) The user is prompted to change the email. 3) The user is able to tap on the email field, and edit the name with a	1) The user is taken back to the profile screen. 2) The profile has updated the email.

					keyboard. 4) The user taps on the accept button, or hits enter on the keyboard.	
T7.11	T-1 [The user has created an account] T7.10	Ensure that when a user attempts to change their email address only valid email addresses are allowed.		1) The user has an internet connection. 2) The user is at the profile screen. 3) The user is logged into account.	1) The user inputs a non-acceptable input.	1) The user is prompted to change the input in the email field. 2) If the user exits before changing, the original email is still saved.

Client Signature:

Date:

_____ / _____ / _____

Company Liaison Signature:

Date:

_____ / _____ / _____