Proposal for Design and Development of Mobile and Web Application

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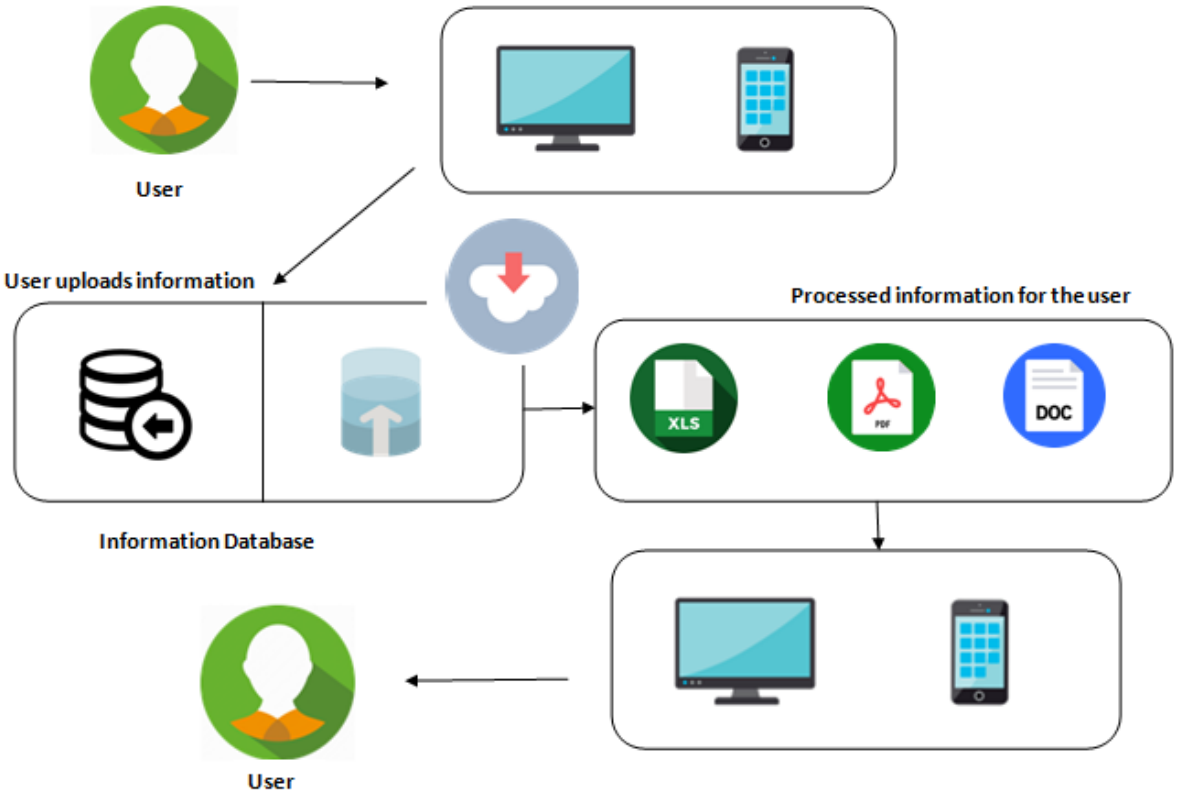
Overview

- **What is this project about?**
  Inqui-Lab Foundation, a Non-Profit working towards nurturing creativity and innovation in the classrooms is working with schools to help teachers and instructors to execute the program. Inqui-Lab will provide the teachers and other stakeholders with analytics and tools to ensure successful implementation. To monitor Inqui-lab programs effectively, fine grained data collection is essential. In order for this fine grained data to be collected without placing undue burden on the teachers, we will develop a semi-automated solution with a combination of mobile app and bulk scanning. We will also provide a customized dashboard of key metrics based on the data collected; this will provide the stakeholders an overall progress report and also allow for drill-down to pinpoint and respond to issues during the implementation.



- **Who is the customer? What is their need that we are trying to address?**
  This project has multiple customers. They are:

- Instructors: Each Instructor oversees 10 - 12 classrooms from different schools. They will be responsible for overseeing the Concept cycles execution. Paper based data makes it difficult for them to spot trends and do analysis. A dashboard which is updated regularly and highlights areas needing their attention will help them utilise their time more effectively and aid their decision making.

  Manual data entry into the database at the child level requires additional time and effort by the instructor. Lack of access to computers and Internet and inexperience with technology further complicates this process. Inqui-Lab addresses this by using technologies which the user is already familiar with. It may be filling out a paper form which can then be scanned or taking a picture of a filled out form for submission.

- School Management: Currently they do not have access to a digital dashboard on status. Like the instructor, they too have monitoring responsibilities but lack tools to help them do this effectively. Having access to analytics about the classrooms and also to data about individual students and who might need special attention will help them monitor the program effectively.

- Donors: They will have access to a dashboard which will provide a snapshot of the program execution at regular intervals.

Scope

What key use-cases will be out of scope?

- Paper-based reporting of analytics dashboard to stakeholders
- Mobile browser experience – mobile will focus on app, and desktop on browser
- Provision of smartphones to stakeholders
- Data capture of student's non-academic performance including arts, physical education and co-scholastic activities

Key UX Journeys

Mobile App:

-User wants to install (using .apk file) and register to start using

- User could have downloaded the apk from a website/email
- Message is displayed about permissions requested by app
- User selects Yes
- App is installed
- Registration screen is displayed
- Warning message is shown if user is not connected to the Internet (Registration requires user to be online)
- User enters email id, password, role(teacher, instructor)
- Depending on role chosen other fields are displayed

- User submits all information
- If connected, information is uploaded to the database
- If database returns success, user is redirected to Home Screen
- If database returns an error the error message is shown to user. Ex: User with this email already exists, User is not yet authorised please check with support
- User scans test OMR form

-User wants to submit the design sheet

- User clicks on app (Auto login, so no need to enter credentials)
- Home Screen is displayed
- User selects the school and then the classroom
- User places form appropriately on desk
- User clicks on option 'concept cycles' , then 'design upload'
- Camera opens
- User focuses on the paper form
- User adjusts corners so that whole form is captured properly
- User clicks on button to take the picture
- User sees confirmation (maybe a green tick) of picture taken properly
- User then selects the appropriate student if from a list of options and then clicks 'done'.
- If user is connected to Internet file is automatically uploaded to the server, receives confirmation
- If user is offline file is stored locally and message shown that file will be uploaded later

-User wants to check the selected designs for his class.

- User clicks on app
- Home Screen is Displayed
- User selects option 'School'
- User selects option 'classrooms'
- User selects option 'view selected designs'
- User sees list of student names(IDs) with their designs that have been the selected

-User wants to request materials for his class.

- User clicks on app
- Home Screen is Displayed
- User selects option 'School'
- User selects option 'classrooms'
- User selects option 'view selected designs'
- User sees list of student names(IDs) with their designs that have been the selected
- User selects the "request materials" button to place a request for procurement.
- User is notified once the materials are dispatched.

-User wants to see the classroom information

- User clicks app
- Home screen is displayed
- User selects option School
- User selects option 'classrooms'
- User selects option 'dashboard'

- User is presented with the classroom data

-User wants to see the student information
- User clicks app
- Home screen is displayed
- User selects option School
- User selects option ‘classrooms’
- User selects option ‘Student list’
- User selects the student whose information he wishes to see
- User is presented with the student information.

-User wants to submit observations or feedback
- User clicks app
- Home screen is displayed
- User selects a particular ‘School’ from the dropdown list of schools
- User selects option ‘classrooms’
- User selects ‘Feedback’
- Screen is displayed with the options of concept cycles
- User selects either audio or text
- Audio recorder is opened in case of audio file
- User clicks on ‘done’
- User enters the feedback manually for text format
- Data, audio file is uploaded to database, server if connected to Internet else saved locally
- User returns to Home Screen

-User wants to share pictures
- User clicks app
- Home screen is displayed
- User selects a particular ‘School’ from the dropdown list of schools
- User selects option ‘classrooms’
- User selects ‘share’
- Screen is displayed with the options of pictures/audio/video
- User selects the option he wants to use
- A camera is opened to take pictures or videos in case of picture/video selection
- Audio recorder is opened in case of audio file
- User clicks on ‘Done’
- Data is uploaded to database, server if connected to Internet else saved locally
- User returns to Home Screen

Web Application:
-User wants to view program progress across all his schools
- User opens browser, goes to home page of the web application
- User logs in by typing User Name and Password
- User sees his dashboard display with all relevant data.

Discovery and engagement

- How does the customer discover this product?

- During training - the app is introduced to the customer.
- Via Email - Customer receives an email along with the install
- Via WhatsApp – Customers receive a message with the app install link in a Whatsapp message

- How does the customer engage with the product?

Mobile App:

- Instructor uses the app to submit design data
- Instructor uses the app to request for materials for selected designs.
- Instructor uses the app to monitor the progress of his students and to identify students who need additional help.
- Instructor uses the app to share his/her story, pictures of the implementation and any other AV files
- Instructor uses the app to share feedback about the program.

Web application:

- Donors can use the dashboard to see how their schools are progressing in program implementation
- Schools and Instructors can view the dashboard to monitor program implementation at the School level

- Does the customer have to acquire the product? If yes, how?

Yes for the mobile application. The customer has to install it from a predetermined location. The customer may have received an email with the application install or a whatsapp message with the installation link. The app could be shared with them by Inqui-Lab trainers via Bluetooth. The customer can use a browser to access the Web Application, no install is required.

- Why would the customer keep engaging?

Using the mobile app will allow the customer to be more productive. The dashboard will help the user to identify issues during the implementation so that they can take appropriate action.

Requirements

1. *Data Capture*

#	Requirement	Description	Comments
1	Mobile App	Input via camera	User takes photograph of completed Design sheet, photograph is uploaded to image server. The photograph should be corrected for skew
2	Mobile App	Input via data entry screens for monitoring	User enters student IDs and Names on the first login.
3	Mobile App	Ability to work in offline mode when user does not have connectivity	Data and media(photos) should be uploaded to server when connection is

			available
4	Mobile App	App should support text display in Telugu	
5	Web App	Upload of image file	User should be able to upload scanned images for processing
6	Web App	Input via data entry screens for monitoring	Parameters same as for Mobile App(Data Capture # 2)

2. *Content Distribution*

#	Requirement	Description	Comments
1	Internet	Mobile application can be downloaded and installed	
2	Bluetooth	Mobile application can be installed via ShareIT from mentor's phone	
3	Email	Mobile application can be sent to user via email	
4	WhatsApp	Mobile application install link can be shared via WhatsApp	

3. *Training*

#	Requirement	Description	Comments
1	User Training Material	User manual, short videos to be created	
2	Internal Training	Training for Instructors on the usage	
3	External Training	Training for School management and Donors on Usage	

4. *Monitoring*

#	Requirement	Description	Comments
1	Technical Report	Errors on server, processing times	
2	Report	Usage metrics by user	
3	Alerts	Information not submitted within specified timeframe	

5. *Updates*

#	Requirement	Description	Comments
1	Framework to push updates to the user	App should detect that newer version is available, sync local data and force the user to update	

6. *Support*

#	Requirement	Description	Comments
1	User queries	How to?	Should use documentation/videos. If still not resolved, instructor can use the next level of support.
2	Technical support email	User can send email regarding problem with application or web dashboard	We should aim for 24 - 36 hour response time.

7. Non-functional requirements

Requirement	Description	Comments
Scalability		Web app should support around 200 concurrent users. Mobile app should allow atleast 400 downloads/uploads when users are online
Performance		Both the mobile app and web app should be responsive
User Design		User Interface and layout should be easy to use and intuitive