Proposal to Freeze Requirements for Work Initiation

Pre School Education in Aanganwadi

by
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Ref:
Letter no. F2(1002)/DoIT/Tech/16/I/67354/2017 dated 13-4-2017
Letter no. F2(1002)/DoIT/Tech/16/I/67400/2017 dated 17-4-2017

Madam/Sir,

In order to begin work I would like to get a detailed requirement set approved and frozen for the duration of this project. This is in the interest of keeping deadlines and avoiding feature creep. The following document describes the requirement set and it's proposed general solutions.

As soon as the software requirements are frozen, I will to begin work on the app. Looking forward to your approval of these requirements.

Sincerely,
Arjoonn Sharma

1. General Requirements
    a. Mobile App needs to be created
        i. This implies that the app needs to be created
        ii. It also implies that a backend service needs to be created to support the use of such an app since the Government would need to control the content available on the app.
    b. App needs to be dynamic
        i. This implies that the application cannot be a simple content service.
        ii. It must allow changes as and when the government needs to change it.
    c. Must work on platforms Android, iOS, Windows
        i. This implies that three separate apps need to be developed.
        ii. The logic must remain the same across the applications.
    d. All standard display sizes must be supported
    e. Portrait and Landscape orientation support
    f. Audio Video playback support on all platforms
        i. This implies that the software must allow for playback within the app itself
    g. Pagination of large datasets
        i. This implies that network usage of the app must be optimized to be very light keeping in mind the large number of Indians on low bandwidth Internet connections.
    h. Search based on Category and Type
        i. The ability to search content based on these two features needs to be incorporated.
2. Functional Requirements
    a. Supervisor can access activity wise materials for the following activities
        i. supplementary nutrition
        ii. early childhood education
        iii. growth monitoring
        iv. healthcare
        v. nutrition education
        vi. health check up,immunisation and referral services
    b. Each activity has a sub menu as such
        i. Syllabus
        ii. Curriculum
        iii. Activity Bank
        iv. Activity Books
        v. Child assessment card
        vi. ECE Certificate
        vii. Time table
    c. Primary target usage size is 60,000 to 240,000 users (number of anganwadi)
        i. One to four users in each aanganwadi is expected
    d. Secondary target usage size is 2.8 lakh (number of children under consideration)

i. The application must be able to grow to support all children becoming app users in the future without major architecture changes.

e. Content view support for mp3, mp4, PDF content
f. Ability to dynamically create forms and pages
    i. The government must be able to extend the app in a simple way.
    ii. The government must be able to gather data using the app.
g. Proposed dropdown / tab hierarchy for interface is as follows.
    i. Early Child Education
        1. Activity Bank
            a. Physical Development
                i. Exercise
                    1. Video
                    2. Document
                    3. Audio
                    4. Aanganwadi Educational Content
                ii. Activities
                iii. Indoor Games
                iv. Outdoor Games
            b. Physical Development
            c. CognitiveDevelopment
            d. LinguisticDevelopment
            e. Social Emotional Development
            f. Creative Development
        2. Syllabus
        3. Curriculum
        4. Activity Books
        5. Child assessment card
        6. ECE Certificate
        7. Time table

3. Requirement Resolution
    a. Front end will be created using Phonegap.(Apache2 license)
        i. This is the app that the users / supervisors / administrators will see.
        ii. This covers requirements 1.a to 1.f
        iii. Requirements 2.a 2.b 2.e are completely covered with this
        iv. Requirement 2.c 2.d 2.f 2.g are partially covered by this the other half coming from resolution 3.b
        v. Additionally this keeps the program logic the same across the different application deployment platforms making the app more secure.
        vi. Writing the actual app logic covers requirement 2.g completely
    b. Backend will be developed in Python 3.5 using Bottle (MIT license)
        i. This is the backend which holds the data along with authorization and authentication information. No user of the app directly interacts with this.
        ii. The app needs this to function.

iii. This covers requirements 1.g and 1.h
iv. Requirement 2.c 2.d 2.f 2.g are partially covered by this while other half is covered by resolution 3.a

c. Database
    i. Since the backend must store it's data somewhere, it is useful to store this data in a professional manner.
    ii. In case the government already has a database solution in place I propose using that to avoid license costs.
    iii. In the case that such a solution is not available for use I propose using PostgreSQL due to good performance statistics.