Criterion B: Analysis

Proposed solution:

The IIC already has an online version of the Al-Akhbar. Users can subscribe to an email version of the newsletter. However, it is not mobile-friendly, and limits the user to a desktop/laptop computer. The user also had to be connected to Internet to view the information.

The best solution proposed was a client-server based Android application that is compatible on mobile and tablet devices. All users would be updated through their devices, and would be able to access news items whenever they need to.

Requirement specification

IT system requirements

Application:

- Android OS based phone/tablet (at least version 4.0, 2011)

- Device with at least 512 MB of RAM, 5 MB local storage, 800 MHz processing

- Color touch screen device (Non-touch screen Android devices will not work)

- Application package (.apk) stored online with Google apps, free of cost for the users

Database:

- A computer purchased in the last 5 years with Internet connection and Java 2.0+

- Keyboard/Mouse for information input into database

- A computer with at least 512 MB of RAM, 50 MB of free storage, 1.00 GHz processing

System interaction

- Application must be compatible with a range of Android OS devices

- Theme must be optimized for a range of screen pixel densities (range of themes)

- User must be able to interact with the device by touching screen

- Both landscape/portrait view settings

- A suitable logo must be designed to help find the application in app drawer

- GoDaddy supported Internet browser (Chrome, Internet Explorer, Safari, etc.)

- WiFi/3G connectivity for downloading application and the content

Input

- News items added to GoDaddy server. Application will fetch information from database

- Touch screen to interact with application

- Title, subtitle, and body information provided by the IIC will make a database news record

- Internet connection must be available for first time use (download database file)

- Contact information of the IIC will be hard-coded

- Enter screen will have an "Enter" button to move to the news list.

Output
- Data formats downloaded from the hosted database; used to update the application

- Database file will be saved to Android local storage, for offline mode

- Information organized correctly. Each tab will display specific information

- News items displayed in clickable list

- List will expand; it will display expanded details in a separate screen

Processing
- Clicking on "Enter" button to move to news list screen

- Clicking the tabs at the bottom to switch through different news categories

- Clicking a specific news item to launch an independent activity

- Launching download thread to save JSON database file to local storage

- Converting the JSON file into readable string to display application content

Security
- The database is hosted through GoDaddy servers, security is dependent on them

- Database login credentials with IIC staff members

- Read-only database permission, only Al-Akhbar database manager can change content

- Application only distributed to the Ismaili community through a private site

- Offline application; no worry for hackers

Specific performance criteria

The following specifications will be used to measure the success of the IT system:

1. Create an application/system to display weekly news updates, event information, and Quote of the Week from Ismaili Institution Canada (IIC).

2. Application must be user friendly and work smoothly with the user.

3. Application should be visually appealing, with a logo.

4. Application should provide important contact information of the IIC.

5. Create a server-end application to allow Hamida and IIC committee members to input information into the database and keep the users updated.

6. Database entries are user friendly for the IIC, and organize content appropriately and automatically.

Justification of chosen solution

The majority of Ismaili families that use IIC services have at least 1 Android device. Therefore, accessibility is not a major concern (email system will still run as well).

As Hamida stated, the users must be updated weekly. An Android application could connect to a client-server database using the Internet, and fetch the news. This method would update the users instantly, and be very efficient as no paper is involved. Furthermore, users can simply tap the news item they are interested in and get the details instantly, making the application easy to use. A ListView interface would create more white space to make the content easier to read. Additionally, all news items could be organized in appropriate categories to guide the user and make viewing user-friendly.

The Android OS was chosen over iOS due to multiple restrictions. Personally, I have enough experience in advanced Java, since grade 10, to develop a mobile-application. iOS development would have taken a longer time to learn, and would not have been as complex.

iOS would restrict certain aspects of the application. All apps for iOS need extensive approval from Apple. The long approval process would result in many logistical problems for project deadlines. In Android, the approval takes less than 48 hours, so the application would be launched much earlier. Moreover, the coding library for Android is larger than iOS, as Android is open-sourced. The Al-Akhbar application could implement a library of custom features, freely developed by the open-source community, to extend its features. This would save development costs, and the IIC could provide the application for free. In contrast, Apple libraries upgraded to Swift without the support of 3rd party packages. The new system lacks strong support and has small user libraries, making app development more difficult.

Apple libraries do not support native Internet API connections (third-part packages are required), whereas the Android AsyncTask Internet system is built into the OS. This makes the Android OS more reliable when updating news content for Ontario users.

Finally, all Apple applications must be developed with a monthly license. The license costs $99/month. Financially, this would not make the application free. Android applications require a one-time $25 fee.

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