Bay Area Chess
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Bay Area Chess – Project Plan
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Executive Summary

Application Overview and Purpose

The Bay Area Chess app would greatly enhance convenience and keep the chess community updated and informed. The majority of the target audience are iOS users, however, the current website does not have a mobile friendly state. This standalone app would share most of the features of the site, but enable easy, user-friendly access for thousands of users. On top of that, the app will boast additional features not available on the website. The main feature will be push notifications which will increase interactivity with the chess community. For example, it will remind users of upcoming tournaments and help them avoid late registration fees. It can also inform them of tournament result releases. Ultimately, the mobile application will allow the community to be more informed about chess events in the area, allowing them to fully take advantage of the chess opportunities around them.

Application Functionality

The app will feature a main landing screen that displays icons to different parts of the website (see GUI sketch below). Each of these icons will lead to a specific page that displays the appropriate information. Presently we have prioritized four features to be implemented, namely tournaments, clubs, enrichment and results. The tournaments feature would display the list of tournaments and the advanced entries list for each, as well as allow for mobile registration. Furthermore, if time permits we would include an additional information page for each tournament. The clubs and enrichment pages would display relevant information similar to that on the website. Finally, the results page would have pop up notifications on top of just displaying the results. Once this is done, we will proceed to other non crucial categories such as calendar, news and FAQ, where information would be dynamically displayed to allow users access to the appropriate up-to-date information.

Technical Considerations

Platform
We have decided to develop the application for iOS platforms since end-user data showed that it is used by 73% of the user base. Furthermore we've decided to primarily develop for iPhone, as iPhone apps are usable on iPad/iPad Mini platforms (though, with resolution and layouts catered to the iPhone), whereas the reverse is not true. It should also be noted that if an iPad specific app were to be requested, the views would have to be ported to iPad, but the rest of the code base would still be used to drive the core functionality of the app.

Expenses
Apple requires App publishers to have a developer account, which costs $99/year to maintain, thus the Bay Area Chess Organization will have to pay to maintain this account every year. This has been approved by our client. Because this app will rely on existing database and server infrastructure for the Bay Area Chess Organization's website, we project that there will be no additional fees for retaining user login information, event information, etc.

Specific Technologies
Within the iOS development environment there are two programming languages used to natively develop applications. Before 2014 Objective-C was the language used to develop iOS apps, however Apple has released another language, Swift, which they are pushing developers to use for future applications. Our team has decided to use Swift for several reasons. The first reason is future-proofing the application. Because Apple is pushing developers to use Swift to develop apps from iOS 8 onward, it is likely that most app developers will switch to using Swift to develop their apps. This trend results in more information (in the future) available online for reference if this app needs to be updated, and more developers available to maintain it if necessary. The second is the advantage that Swift has in development speed. That is, Swift is, in general, less verbose, easier to read and write, and quicker to learn than Objective-C. This means that we, as developers can focus more on developing the product, rather than spending time worrying about specific code semantics. The third is performance, Apple boasts that Swift is 40% faster than Objective-C. This is a very significant speed increase, and, seeing as Swift is still in early stages of development, it is extremely likely that the performance increase will actually be much greater than this.

Much of the information for this app will be accessed via the pre-existing MySQL database that is used for the normal website, this way no new database infrastructure is needed to power this app, and the data will be consistent across platforms.

Overall Goals and Scope

After discussing with the client, we have come up with a list of features to be implemented, ranked according to their priority level. These features are:

1. **User accounts and log-in functionality:** users will be able to sign up for an account and log in to the app (using the same sign in information as the website)
2. **Tournaments - list of tournaments:** we will be able to display the full list of tournaments on the app according to those stored in its database
3. **Tournaments - registration:** allows users to register for tournaments through the app
4. **Advanced entries list:** able to display participants signed up for events ahead of the tournament date
5. **Individual tournament pages:** displays information on tournaments, each on an individual, separate page
6. **Clubs:** displays chess clubs available (stored in database similar to tournaments)
7. **Enrichment:** displays options for chess related enrichment opportunities (similar to tournaments)
8. **Results:** publishes tournament results and enables pop up notifications to users once they are released
9. **Pop up notifications:** other pop up notifications, like notification for registration for impending tournaments

Design Goals

The core features of the app include what is currently the most used feature of the website: tournaments. Users should be able to view tournaments and register for them. They would also receive pop up notifications regarding upcoming tournaments. After this, we will work on the other features listed above.

Due to the pre-existing database, the client should not have to change her workflow, because the app will be synchronized with the database that she is already updating with new information. Moreover, most of the different pages in the app (tournaments, clubs, enrichments, etc.) will have similar look-and-feels, so the code in general should be easily maintainable.

Dependencies

The client will need to provide the following for us to embark on and complete the project:

- Relationship diagram among the different features and aspects of the application
- Front end designs and icons for graphical user interface
- Information about and access to the online website's database
- Access to current or new separate web server to build and host API

We have discussed these needs with the client and she has been very quick in providing most if not all of the information. In general she is very quick to provide any information that we need.

Concerns

One concern is with regard to the application programming interface between the mobile iOS application and the database, specifically how we are going to host this API. As the bay area chess website already has a current web server, the first option we have is to build and host the API on that current web server. The second option is to host it on a separate and new web server. We need to discuss with the client on which of those options to take, as there are pros and cons to either option, particularly in terms of the traffic and scalability of the application.

Team Organization

Daniel Zhang (Project Manager)

- Maintain project milestones and timeline
- Primary contact and ensures team has necessary tools/access

Oren Bukspan (Business Lead)

- Primary contact between client and team
- Coordinates client meetings, manages client requirements and needs

Carlos Reyes (Technical Lead)

- Provide technical direction with regard to platform, database, languages, toolkits, design patterns

Tze Kang Ng (Quality Assurance)

- Determine and carry out appropriate testing to ensure quality of product

Task Deliverables

Sprint #1 Pretotype
(4 September - 17 September)

- Graphical user interface model/layout on
    - Homepage with icons linking to the various pages for features
- Determine repository for API server
- Determine and finalize minimum viable product

Sprint #2 Prototype Demo
(18 September - 1 October)

- Create a REST API
    - Add log-in functionality
    - Connect app to BAC database
    - Set up API server on staging VM
    - Daemonize API server and determine startup activity
- Implementation of tournaments and sub features
    - List of tournaments
    - Get tournament data from database
    - Push notifications

Sprint #3 Baseline Prototype
(2 October - 22 October)

- Complete full implementation of tournaments features and its sub features
    - Advanced entries list
    - Individual pages for each tournament
    - Registration
- Implementation of clubs and enrichment feature

Sprint #4 Alpha Client Demo
(23 October - 5 November)

- Push notifications for release of tournament results
- Implementation of rest of features
- Add analytics capabilities

Sprint #5 Beta Client Demo
(6 November - 19 November)

- Debug and improve functionality of application and its features
- Test user interactivity with the application to see what features may need work
- Make any final updates to the UI/UX design
- Implement additional improvements and features

Sprint #6 Production Client Demo
(20 November - 11 December)

- Continue to debug and improve overall functionality
- Write up documentation for how to maintain application
- Ensure transition of app to client is smooth