

USER EXPERIENCE IN THE CONTEXT OF “GYMSEI”

by

CHRISTINA YUKIKO WATKINS

A THESIS

Presented to the Department of Computer and Information Science
and the Robert D. Clark Honors College
in partial fulfillment of the requirements for the degree of
Bachelor of Arts

June 2014

An Abstract of the Thesis of

**Christina Watkins for the degree of Bachelor of Arts
in the Department of Computer and Information Science to be taken June 2014**

Title: User Experience in the Context of “Gymsei”

Approved: 

Stephen Fickas

The purpose of this thesis is to explore the potential of the Lean UX development process through its execution in a creative project of mobile application development. This development process demonstrates the use of Lean UX techniques in order to constantly aim for improved application user experience for the customer. The final products of this project are a viable mobile application prototype, process evaluation and future development directions. Many conclusions were drawn based on the feedback received and implemented throughout this process.

Acknowledgements

Foremost, I would like to express my sincere gratitude to Professor Fickas for acting as my primary advisor and supporting me throughout this process. Additionally I would like to thank Professors Faulk, Southworth and Carey for acting as integral members in the completion of my thesis. Without the help and guidance of those mentioned above, I would not have been able to succeed in this endeavor.

I would also like to thank my parents, Janice and Clayton Watkins, for the opportunities they have given me throughout my lifetime and for the constant encouragement in every aspect of my life. You have always supported every decision I've made and have helped me to become the person I am today; I cannot put into words how grateful I am to be your daughter.

Lastly, I would like to thank Matea Merriman, Elizabeth Uong and Kaitlyn Chock for their constant encouragement and support through my journey in the Clark Honors College and completion of my thesis.

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List of Accompanying Materials

1. CD including “Gymsei” code and files

a. config.xml

b. css

i. add.png

ii. anatomical.png

iii. anatomy.png

iv. background.png

v. choose_lift.png

vi. choose_stretch.png

vii. g_logo.png

viii. gymsei_logo.png

ix. men.png

x. menu.png

xi. music.png

xii. next.png

xiii. play.png

xiv. prev.png

xv. settings.png

xvi. stop.png

xvii. style.css

- xviii. women.png
- xix. workout_builder.png
- xx. workouts.png
- xxi. jquery mobile css files and images
- c. icon.png
- d. index.html
- e. js
 - i. appFile.js
 - ii. application.js
 - iii. jquery-1.11.0.min.js
 - iv. jquery.mobile-1.4.2.js
 - v. player.js
 - vi. script.js
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- f. splashscreen.png

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Introduction

Smartphones have become commonplace in the typical American household, nearly every college student is holding the ability to tweet, Instagram, Snapchat or Google in their hands. There exist a seemingly boundless number of mobile applications and capabilities that this increasingly popular type of technology can hold. But what lies behind these “apps” that we use every single day? With so many to choose from, how do we know that we are choosing the one right for our specific needs and of the ones that fill those needs, which one is the best? There is no way that these questions can be concretely answered but by looking into the ways in which these applications are developed, it is possible to observe the successes and failures of certain development decisions and the end effect on application users. This thesis will analyze one particular method of software development—Lean UX—in the mobile context to understand how this development process contributes to the overall user experience of an “app.” I will also be applying these principles to a process of application development that mimics a real world, client-inspired, mobile development project.

Smartphone Industry

By December 2013, the number of smart phones purchased in America numbered 156 million (Lella). In 2012, smart phones obtained the majority of the cell phone market share over feature phones, “a mobile phone that incorporates features such as the ability to access the Internet and store and play music but lacks the advanced functionality of a smart phone (Simpson),” and have since continued to increase.

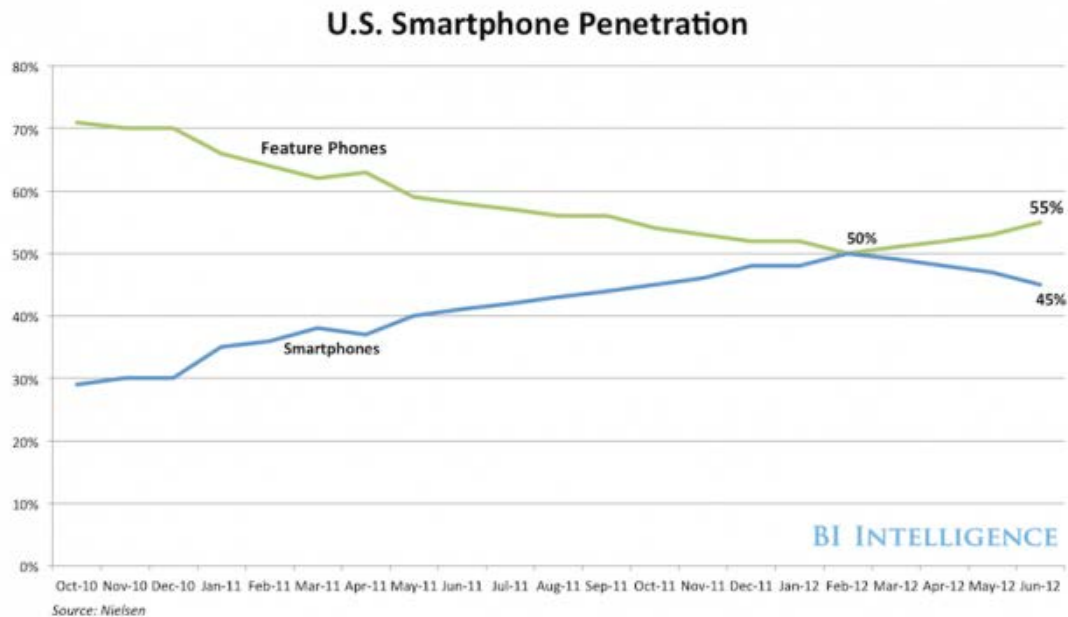


Figure 1-U.S. Smartphone Penetration: Graph of the penetration of smartphones vs. feature phones in the U.S. between October 2010 and June 2012 (Blodget)

The Oxford English Dictionary defines a smart phone as “a cellular phone that is able to perform many of the functions of a computer, typically having a relatively large screen and an operating system capable of running general-purpose applications (Simpson).” In terms of this thesis, the key distinction of smart phones is this ability to run mobile applications.

App markets, where mobile applications can be downloaded and which vary depending on the operating system of the phone, have expanded exponentially in recent years. Google, current frontrunner as original equipment manufacturer (OEM) in the smart phone market with 51.8% subscribing to their Android phone, has over 1 million applications available for download through “Google Play” with more than 50 million downloads as of July 2013 (Welch). Similarly, Apple surpassed the 1 million mark in terms of the number of applications offered through their “App Store” with more than 60 billion total downloads by October 2013 (Ingraham), although still behind Google

with only 40.6% of total smart phone subscribers at the end of the year. Other mobile platforms include Blackberry with 3.8% of the market, Microsoft with 3.3% of the market and Symbian with 0.3% of the market (Lella).

Developing for Mobile

As a result of this constantly expanding market for smart phone applications, software development has also evolved to accommodate the unique environment of the mobile market. As mentioned earlier, the mobile market is segmented across different OEM's and platforms and as a result, software developers must take these specifics under consideration when developing for mobile. The varying degrees of screen size, hardware specifications, configuration and overall range of functionality across these different platforms can dramatically affect the specifications and requirements of a particular application ("Software Development For The Mobile Market.").

In addition to technical specifications, the element of User Experience (UX) also takes on an entirely new set of guidelines in the mobile context. Lyndon Cerejo, a certified user experience and usability strategist at Capgemini, defines this context by explaining that "The mobile user experience encompasses the user's perceptions and feelings before, during and after their interaction with your mobile presence — be it through a browser or an app — using a mobile device that could lie anywhere on the continuum from low-end feature phone to high-definition tablet (Cerejo)."

Cerejo goes on to explain the many components that must be considered when evaluating mobile UX: functionality, information architecture, content, design, user input, mobile context, usability, trustworthiness, feedback, help, social and marketing. Functionality refers to the features that an application provides to the user. If the

application does not address the features the user desires, the user experience is greatly threatened. Information architecture refers to how these features are presented to the user, such as how the content is organized and how navigation between features is handled. Even if the application has all of the features desired by the users, if they are not able to figure out where to access these features, it is just as detrimental as not having them. Content covers the types of things that are included in the application, such as media, text, images, etc. The balance of text and visuals, especially when dealing with smaller screen real estate, can have an immense effect of the users perception of their experience. Design includes the layout, colors and overall visual scheme that the application employs and has a similar effect as content. User input addresses the information that is required from the user. In a mobile context, the smaller, touch-screen, keyboard is less efficient than the full keyboard of a laptop or desktop and therefore the user experience is inversely proportional to the amount of information the user has to manually enter. Mobile context brings to attention the fact that mobile users could be in a great variety of conditions while using the app, such as bright light, limited internet connection, single handed use, etc. If the application is difficult to interact with in these kinds of conditions, it will negatively impact the perception of the app. Usability is the overall success of the elements mentioned above; all of the elements need to work together in order to produce a successful experience. Trustworthiness refers to the reliability of the application, most commonly whether or not the input user information will be kept secure. Feedback deals with the amount of attention required outside of using the application, such as notifications and alerts. If there are too many or too few notifications, depending on the purpose, it could affect

the user's experience. Help involves the support provided for the app, the user should be able to easily answer any questions he or she has with the support provided. Social covers the inclusion of social media within the application, sharing data among social groups and applications has become a standard in the technological world and failing to consider this would be a user experience mistake. Lastly is marketing, in order to have a successful app, the user must be able to find it and like it enough to continue its use and expand the customer base. All of these components are important factors that must be considered when developing for mobile and failing to recognize all of them could be the reason an application is extremely successful or fails miserably.

It seems obvious that UX is a significant contributor, if not the only contributor, to the success or failure of a mobile application, but this field is still fairly unexplored and new strategies have steadily been emerging in recent years and will most likely continue to grow with the increasing popularity of mobile applications.

Software Development Methods

The software development process used to be restricted by the high cost of creating physical software deliverables. Software developers were pressured to create a final product that was as close to the specified requirements as possible, as not to waste resources such as floppy disks or CD's and distribution costs, and therefore they approached this process with an overwhelming amount of initial documentation. Now that we are able to send files instantaneously, this physical overhead is considered to be unnecessary and therefore the traditional software development process can be observed to follow this trend of technological evolution. There are several methods of software development that exist currently, the two most prominent being the waterfall method and the agile method.

Waterfall Development

The waterfall method follows a sequential progression of define, design, develop, test, deploy. In this method, each phase produces a particular deliverable and hands it off to the next phase in the sequence, in a very linear fashion, until a final product is produced. Beginning with the requirements analyst phase, the information and specifications about the product are defined and documented. This often involves the managers of the project who interact with the client, while inserting their own professional ideas and opinions, to create an initial set of requirements and specifications. These requirements are handed down to the design phase, where the information architecture is defined (layout, programming language, resource management, etc.). The design then hands off these more detailed specifications to the

development phase, where the product is built based on the design specifications and software requirements obtained in the previous phases. Development presents the viable product to the testing phase, where the product is tested for functionality and correctness. If any bugs or issues are found, the product will be returned back to one of the previous phases for revisions. Once the final testing phase is complete, the product is deployed to the customer. The main criticism of this method is its linear flow and lack of feedback. Although the testing phase does discover errors before handing the product back to the client, the expense of fixing these errors at the end of the process is far greater than if they had been found earlier. This linear method also does not allow for very much flexibility in the requirements. Often a customer will not fully understand their desired requirements initially or change their mind about a feature or function along the way. As a result of this human ambiguity, the software requirements change as the process progresses and the waterfall method does not easily adjust to these changes (Melonfire).

Agile Development

The agile method of software development focuses on addressing the issues that are found in the waterfall method. Dr. Charles B. Kreitzberg and Ambrose Little address this issue in their article, *Agile UX Development*, explaining

It's impossible to construct an accurate and exhaustive list of requirements and then transform them into a truly useful, usable, and desirable product. People don't really learn what they want until they use a product, so a product needs to go through multiple iterations before it achieves a high level of utility and polish (Kreitzberg).

Based on these principles, the agile method is a more iterative approach to development that focuses on interactions between individuals, using working software, incorporating

customer collaboration and responding to change quickly. In addition to these foundations, agile development also incorporates rapid iterations, small and frequent releases of viable products, and constantly evolving requirements that are directly influenced by user involvement. Overall, the agile method of development is an improvement on the more traditional waterfall method in terms of earlier and more frequently tested deliverables, customer feedback and flexibility in requirements ("An Introduction to Agile Software Development").

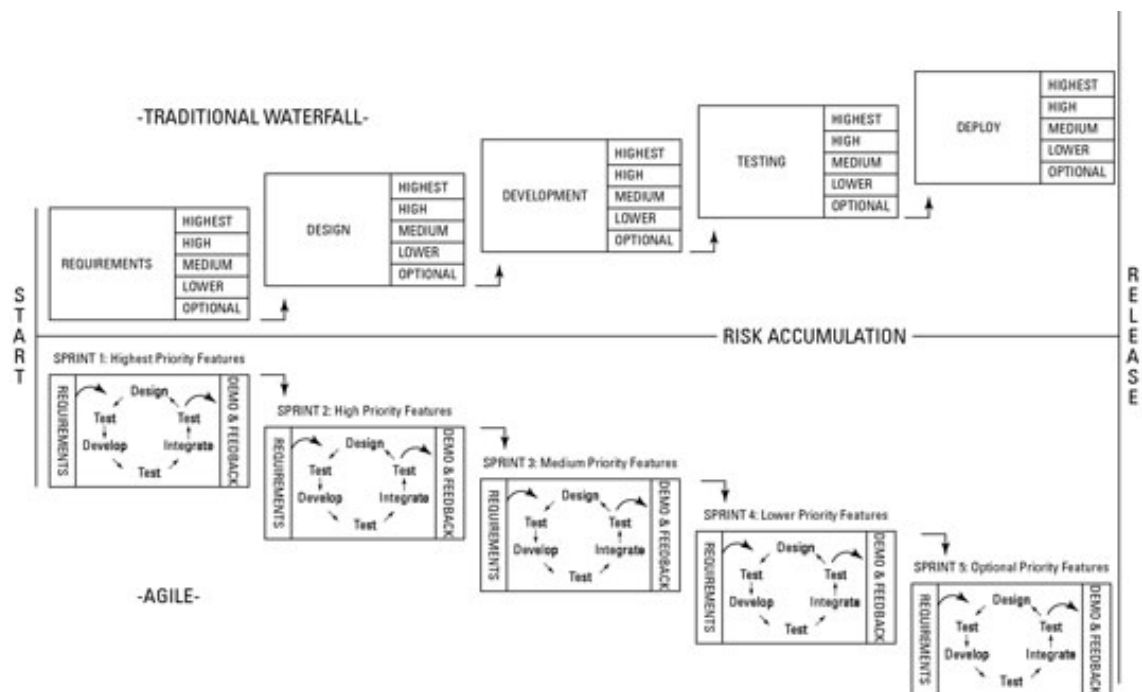


Figure 2-Waterfall vs. Agile: This depicts the waterfall method of development versus the agile method of development in terms of process approach and risk accumulation (Layton)

Lean UX

Lean UX is a radical method of software development, within the agile methodology, that involves several iterations of production and market feedback, optimized for team collaboration and product turnaround. The difference between the

traditional agile method and the Lean UX method is that, while the agile method revolutionized the approach to design and communication, Lean UX adds another layer to the testing and research aspect. Lean UX incorporates the research element into each iteration of development and is able to constantly rebrand and reshape the idea of the product until completion (Ramsay). Lean UX relies on three primary foundations: design thinking, agile software development, and lean startup method. Design thinking is a focus on exactly what the user likes and dislikes about every aspect of a product, including how the product looks, is marketed and is supported. This way of thinking allows developers and designers to collaborate on something that is physically what the user wants and that is also technologically possible. Agile software development is the process of creating iterations of development, each adding more and more functionality to the product by concurrently collecting feedback on the previous development. In the Lean UX context, this strategy also involves constant communication among team members, presenting working software early on, incorporating customers into the feedback cycles, and responding appropriately to the changes proposed in the feedback cycle. Lastly, the Lean startup method follows a *build-measure-learn* strategy for each feedback loop. Build refers to initially building a Minimum Viable Product (MVP) that can immediately be evaluated. Measure refers to the feedback collected from these evaluations, essentially measuring both the success and need for improvement of the given MVP. Learn refers to the process of incorporating this feedback into the next iteration. The Lean UX method helps to bring the customer into the development process to constantly incorporate a user-view into the evaluation

Lean UX Process

Instead of the waterfall method of defining requirements and producing deliverables, Lean UX comes up with a set of assumptions and evaluates a hypothesis through user testing where the results are then evaluated against the hypothesis. This approach allows for ways to achieve a goal without concretely defining how to do so and eventually producing something that optimizes the experience involved in execution of the goal.

The first step in the process, determining the assumptions, serves the purpose of establishing a starting point that the entire team contributes to and agrees upon. The whole team, who, in advance, has prepared analytics reports, usability reports, past approaches, stakeholder analysis and competitive analysis, creates these assumptions. Before any assumptions are made, a problem statement must be established; this problem statement is composed of the current goals of the product, the problem being addressed, and a request for an improvement that does not specify a particular solution. These are often presented in the following format:

[Our service/product] was designed to achieve **[these goals]**. We have observed that the product/service isn't meeting **[these goals]**, which is causing **[this adverse effect]** to our business. How might we improve **[service/product]** so that our customers are more successful based on **[these measurable criteria]**?

Once the problem statement is established, a discussion about the assumptions can take place. Once a substantial list of assumptions is drafted, the team must evaluate which assumptions carry the most risk and those should be the first assumptions addressed.

The next step is the hypothesis. Once the assumptions are established, each is transformed into a hypothesis statement. These hypotheses should address the intended

outcomes, the people you are trying to service, and the features that could achieve the given outcome.

An MVP is created from the hypotheses to help answer these questions:

1. Is there a need for the solution I'm designing?
2. Is there value in the solution and features I'm offering?
3. Is my solution usable?

Prototyping is one of the most useful forms of MVP because it imitates the experience that will result from the implementation under consideration. Prototypes can range from a simple image of what the solution will look like to a functional wireframe that digitally demonstrates the functionality to mid/high fidelity prototypes that very closely imitate what a final implementation of the idea would look like.

The next step in the process is running an experiment on the MVP's, first with teammates, stakeholders or third party members and then with real customers. These testers go through the MVP's and provide their reactions and opinions, all team members are involved in this process of testing and are equipped with certain criteria that the team has decided needs to be answered during the testing.

The final and probably most important step in this iteration cycle is the feedback and research step. Once the MVP's have been tested and feedback has been received, a review session with the team must be scheduled. The purpose of this session is to analyze the raw data collected from the testing and identify what the next steps for the MVP are. To help identify these steps, the team should look for patterns in user responses, outliers in responses and possibly feedback from previous iterations that align with the feedback from the current one.

The iterations of the Lean UX process will happen quickly and often, especially as the product approaches completion, but through these steps the development team is able to get as much out of each iteration as possible for a quicker overall turnaround and ideally optimized product (Seiden)..

Lean UX Principles

Lean UX is broken down into fifteen principles that help to further outline the Lean UX process. Although not all of these principles will be applicable to my own implementation of Lean UX because I will not be working with an entire development team, many of them reveal valuable tactics and approaches to development that I will be able to incorporate.

Cross-Functional Teams: This principle suggests continuous collaboration between all disciplines involved in a software development team (Software engineering, product management, interaction design, visual design, content strategy, marketing, and quality assurance) in order to eliminate the miscommunication that sometimes results from a traditional process of passing the product down the line.

Small, Dedicated, Colocated: This principle suggests minimal team sizes to increase the communication, focus and camaraderie. Having team members who do not contribute anything valuable to the team are unnecessary and act as overhead to the project that can be cut.

Outcomes, Not Output: Success is measured by the outcome of an iteration, such as the feedback responses and what is learned from them, not necessarily the physical output that was produced.

Problem Focused Teams: This principle implies that the process is working towards a single problem to solve, rather than a set of requirements to implement. Focusing on the big picture helps allow for more flexibility while still achieving the desired outcome in the end.

Removing Waste: As mentioned earlier, the focus on documentation is lessened in this type of process and similarly, all material that does not contribute to the final outcome can also be eliminated.

Small Batch Size: This principle suggests not producing any inventory of untested or unimplemented design ideas that are never used; instead only create design specifications if they are warranted in an iteration.

Continuous Discovery: This principle refers to the continuous integration of the customer in the development process, which allows for the feedback needed to evaluate the success of a particular iteration.

GOOB: The New User-Centricity: GOOB is an acronym that stands for “getting out of the building,” a phrase that implies sitting in the office envisioning what the customer wants will be far less helpful than going directly to the customer.

Shared Understanding: This ensures the shared understanding between development team members of the space, product and the customer to ensure that those on the project can work in the same mindset towards the same goal.

Anti-Pattern: Rockstars, Gurus, and Ninjas: This principle speaks to the minimized ego of everyone who is on the team, no one person can feel that they are the expert in the situation and must be able to understand the value of each of the other team members.

Externalizing Your Work: This suggests physical means of thinking, such as using whiteboards, flowcharts and other physical outlets for getting across ideas. This physicality helps to bring an idea closer to reality where every member can contribute in a single space rather than several individual spaces of their own minds.

Making over Analysis: This principle puts emphasis on making something the customer can physically give feedback on rather than trying to analyze internally what needs to be done. Using this feedback will help to create a better MVP in the next iteration than simply going off of analysis.

Learning over Growth: Learning what is done correctly and incorrectly about an MVP before continuing to add features will produce a more robust and thorough final product.

Permission to Fail: Encouraging experimentation with ideas is welcomed. Since an entire team is collaborating together, it is useful to have many ideas on the table, even if not all of them are actually implemented.

Getting Out of the Deliverables Business: This implies that a focus on documentation is unnecessary, although it is good to have an idea to strive for, focusing on the incremental process is more effective than having one set of requirements and each member of the team working separately towards them. This also speaks to the malleability of the initial requirements, which will sometimes be completely different at the end of the development process from what the team began with.

These principles are the fundamental concepts for carrying out a Lean UX project and help to center workflow around the three foundations mentioned earlier. Since many of these principles revolve around the managing and use of teams, I was not

able to directly imitate this process. However, through the use of my feedback team and the dedication to the continuous testing that is characteristic of Lean UX, I am confident that my adaptation of the process still demonstrated the benefits of such a method (Gothelf).

Project Proposal

The concept for my application is based on a marketing proposal done for one of my business classes, for a mobile application that acts as a fitness resource. The members of this group were passionate about making the app a reality and I felt that I would be able to do so with my background in both multimedia and programming. It was decided that I would use this team of individuals to mimic the Lean UX process to develop this application as my creative thesis project. This development project incorporates the design elements that I've acquired from my multimedia minor, the marketing aspects from my business minor and the overall coding and software base of my computer and information science major. The purpose of this project is to evaluate the feedback and research component that is characteristic of the Lean UX method. Through my development process I will be constantly presenting by subject group with minimum viable products and receiving feedback that will then be incorporated into the following iterations.

Vision Statement

Operating under the belief that all people are entitled to a healthy body and fit lifestyle, it is our goal and purpose to provide a product that gives direction to motivation both inside and outside of the gym. Gymsei, fusing the words “gym” and “sensei” (meaning teacher in Japanese), is a kinesiology mobile application that provides the user a database of short exercise video tutorials that can be accessed on the go, at any time. The Gymsei mobile fitness application will be the fastest and most cost effective way of achieving the user's fitness goals. The user opens the

application, selects a targeted muscle group and is presented with a dynamic list of exercise tutorial videos. Each video is 15-30 seconds long, has subtitles, and can be played without interrupting the user's music. Providing fitness expertise and instruction at the touch of a screen, Gymsei's features deliver guidance and direction to all current and prospective gym goers. Effectively, a beginner could walk into a weight room, with no prior knowledge of lifting weights, open up the Gymsei application, and begin lifting with purpose from day one. The Expert gym-goer will constantly be able to change routine while still targeting their favorite muscle groups. Gymsei gives motivation direction, and aims for its users to experience the satisfaction that comes with fitness growth, improvement, and well-being.

Methodology

Although I will not completely be able to imitate the Lean UX method of software development, since I am not working with a development team, I will still be using the iterative method and focus significantly on the testing, feedback and evaluation steps. I have broken my development process into five iterations, which I will be presenting to a group of five users during each cycle. This group of users does not have a background in software development but has a passion for the concept of the app, they are of college age and have varying levels of fitness experience. The purpose of the Lean UX method is to concentrate on constant creation and therefore, even after the completion of this project, there will be room for improvement and continued creation.

The application will be coded in web based programming languages such as HTML5, CSS3 and javascript and converted to a mobile environment with Adobe's PhoneGap software. PhoneGap allows for the use of web-based technologies and creates an application that exhibits cross browser compatibility, eliminating the need to program in device-specific languages. I will also be incorporating the javascript library, jQuery mobile, in order to harness some of the capabilities that are unique to mobile devices.

Gymsei Development Process

The development process for the Gymsei mobile application was broken into five iterations of production after an initial planning iteration. After the completion of each iteration, the MVP was presented to the user group, feedback was collected, hypotheses were created and further development occurred.

Iteration 0: Planning

In the initial iteration, I sat down with my group of users and we brainstormed the different types of functionality and features they would like to see in the final app. As was mentioned before, many customers are not 100% sure of what they want and therefore the ideas that were generated would act only as a jumping off point. These ideas outlined the initial main functionality of the application and provided enough information to begin brainstorming a rough prototype.

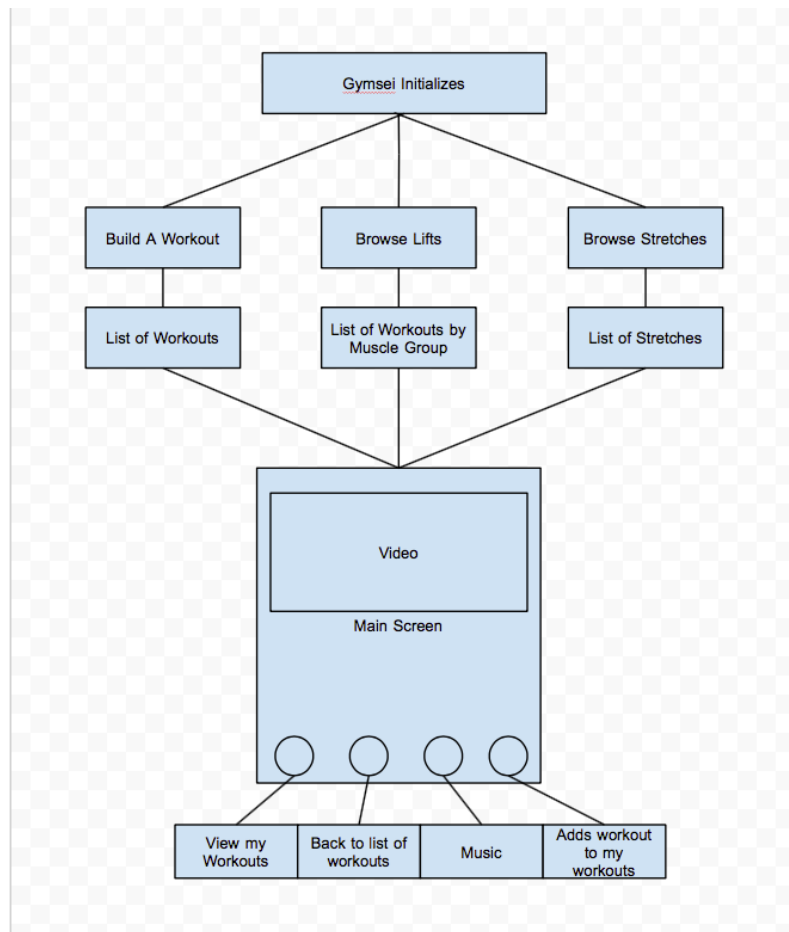


Figure 3-Application Brainstorming: Flowchart mapping out different functionality and navigation details

Iteration 1: Initial Style Tiles and Wireframes

In the first iteration, I took the ideas generated from the planning iteration above and generated a set of wireframes as well as a style tile that demonstrated possible color schemes and logo options. The main purpose of the wireframes was to show how different pages would be formatted and linked together, where different features will be located and which features will be grouped together. When presenting these initial prototypes, the feedback was overall positive. The users responded well to the color palate chosen and felt that it demonstrated the application's dedication to strength and

fitness. However, they felt that it was too masculine and that the application should pertain to both men and women. As a result, we decided to add an additional screen at the application's initiation that would allow the user to choose their gender and, depending on their choice, the interface would appear different. Another style tile was created for the women's version that included lighter, more feminine themes. In terms of the wireframes, the feedback team felt that the navigation was intuitive and that it included all of the elements that had been brainstormed. An additional suggestion was that there be a more visual way to select muscle groups and workouts. From this conversation it was decided that there should also be an anatomical means for selecting these groups. There would be an image of the human body and depending where the user taps, the exercises relating to that muscle group would then be brought up. We also decided that instead of immediately being directed to the list of muscle groups, there should be an option to either choose an exercise or choose a stretch. The last suggestion was to have a link to an exercise "library," where all exercises are listed and are not filtered by muscle group.



Figure 4-Gymsei Style Tile: A collection of theme elements including colors, logo, font, texture

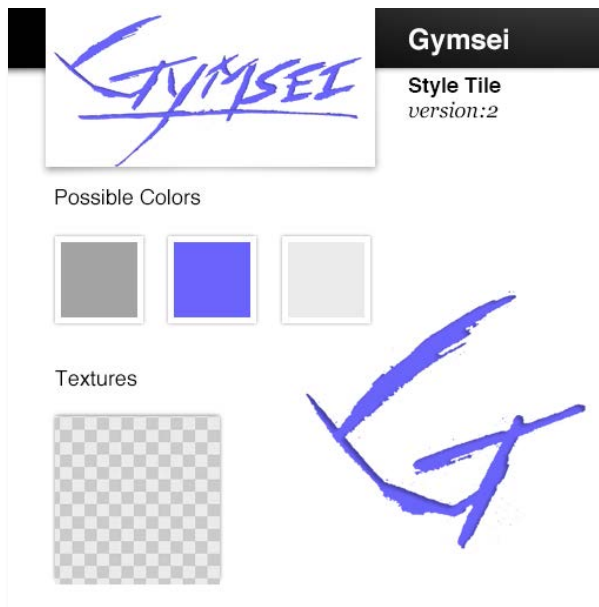


Figure 5-Gymsei Women's Style Tile: Modified colors and theme for female user

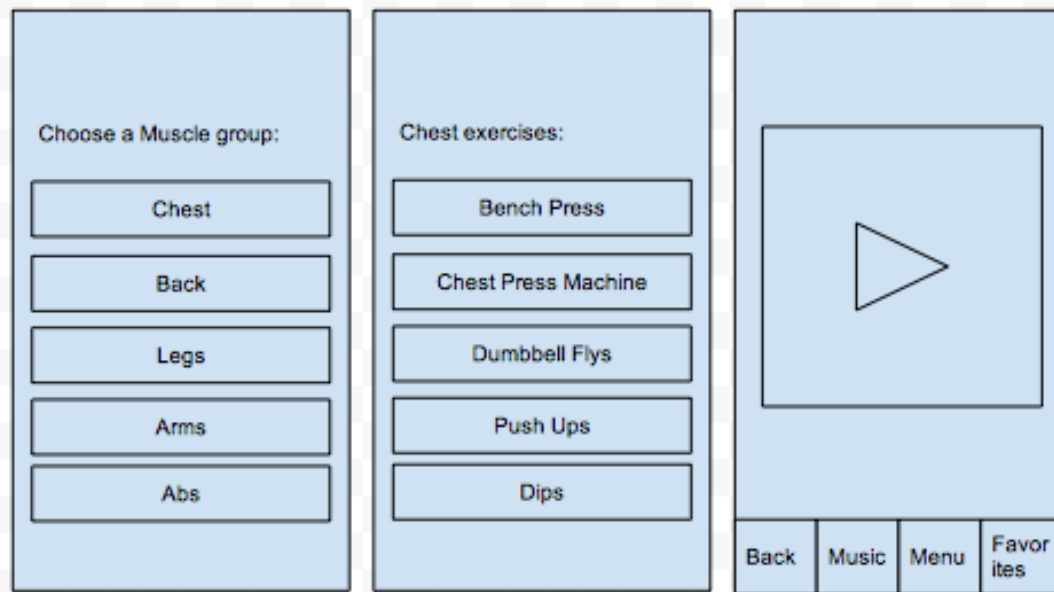


Figure 6-Wireframes: Basic drawings of the interface including feature placement and page components

Iteration 2: Basic Functional Interface

The second iteration involved an actual technical implementation of the interface without the functionality. By presenting this kind of prototype, it allows the client or user to see how the design elements are integrated into the layout that the wireframes defined. It also allows them to see how these elements look in the actual environment, in this case, on a mobile phone screen. This iteration also allows the users to see how the feedback from the previous iteration was factored into the current one. The users were very fond of the styling when seeing it implemented and felt that the decision to include a feminine color palette was a good choice. They were also fond of the icons used in the menu. In terms of feedback, there were no suggestions that resulted from this testing session. Instead we prioritized the functionality to be implemented so that future iterations would be focused on particular features.

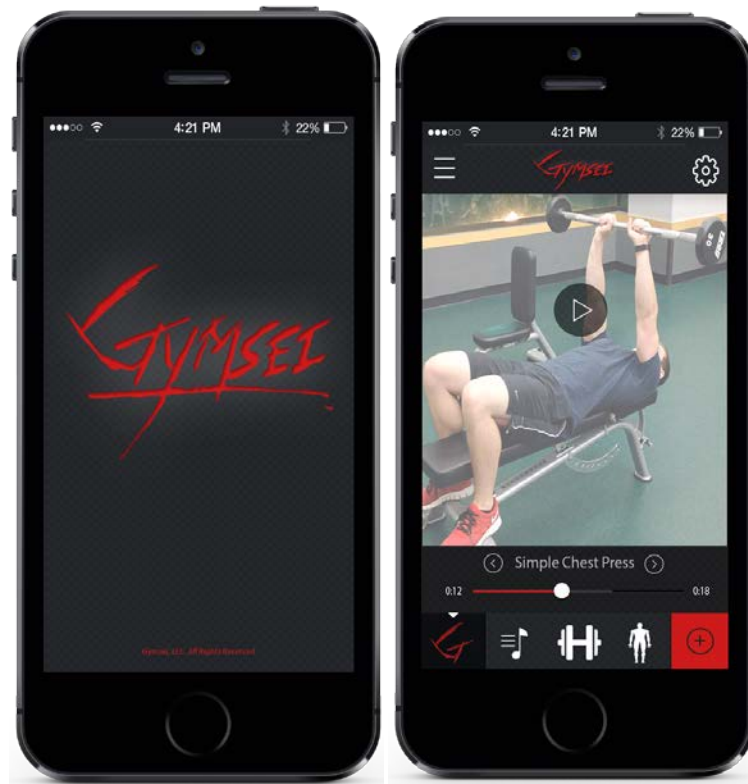


Figure 7-Interface Example: The left image is the splash screen for the initial startup of the application. The right image shows the main interface, when the user has selected a video to watch and their other options are displayed on the screen.

Iteration 3: Implementation of Basic Features

In iteration 2, functionality was added based on the features that the feedback team deemed first priority in the last iteration. The main feature we decided on was the video player feature. Including multimedia in a mobile application can sometimes be difficult due to the large file sizes and sometimes-limited Internet connectivity. My main concern during this iteration was the playback speed and the ability to store such a large volume of videos. Since the application will eventually be hosting an immense number of videos and this video library is likely to change as new workouts are added, storing the videos locally would not be an effective means in the long run. As a result it

was decided to host the videos on a private server and reference them remotely from the application.

An idea that was discussed during this iteration, but was not implemented due to an inability to finalize specifications within our timeframe, was the capability for a user to upload his or her own videos to the app. The app would keep the main “Gymsei” workout video library as its main content but could also have an option for users to browse videos uploaded by other Gymsei users and upload videos of their own. The idea behind this feature is that this would foster a Gymsei community and offer unbounded opportunities for users to find new workouts. Additionally, it allows for professional personal trainers to create their own accounts on Gymsei with instructional videos that they produce themselves and build a client base from the exposure that they would achieve on Gymsei. With this option, the issue of liability becomes a more significant component and therefore its implementation was put on hold until further specifications could be determined.

Iteration 4: Implementation of Advanced Features

The second main feature we decided to implement was the ability to bring the phone’s native music application into Gymsei. It was assumed that many prospective Gymsei users would be simultaneously utilizing the native phone application and we therefore wanted to offer the ability to control this application from inside Gymsei. Since this involved interfacing with the native platform, I was required to utilize some of the PhoneGap API’s in addition to the web based HTML5, CSS3 and javascript. As mentioned before PhoneGap allowed me to implement this feature without having to write any platform-specific code. The API’s used to achieve this included the File API,

InAppBrowsers API, Storage API and Media API. The File API allows the app to access files located in the file system of the device. The InAppBrowser API makes it possible to modify the settings used to open another window based on an external link. The Storage API provides accessibility to the devices storage, specifically its audio files. Lastly, the Media API is a key component because it allows for audio controls like play, pause, next and previous that are necessary giving the user control over their music. Overall this implementation was executed successfully but the idea to allow for Gymsei specific playlists was suggested for future implementation. The feedback team thought it would be appealing to the user if they were able to create a specific playlist that linked with a Gymsei video playlist to create an all-encompassing routine.

Iteration 5: Final Evaluation and Future Direction

The final evaluation and testing meeting was used to evaluate the overall progress made on the application so far and determine possible extensions in the future. The current product has the ability to play tutorial videos, create a playlist of favorite videos, control native music, and browse through the available workouts through various filters. Comparing this functionality to the original goal, all of our large goals were met and through each iteration, small aspects were added to make the overall user experience more ideal. As is, the application could be distributed on the market because it does exhibit the intended functionality but because of the nature of this development process, ideas for improvement were generated, laying ground for future iterations.

The final evaluation also involved brainstorming for revisions to the product in addition to the ideas brought up in the third and fourth iterations, for user uploads and customized playlists. One of which would be for the user to make a profile that could

track their workouts. It would use a calendar interface and create entries based on the videos watched on a specific day. This would allow the user to ensure they are distributing their workouts across different muscle groups as well as add a level of account. Similar to the last idea, adding a feature to set and track goals was discussed. This could involve the user inputting their current weight and desired weight and setting weekly goals of how often and long to workout. These new ideas are a prime example of how the Lean UX method facilitates new ideas as the process goes on and allows for multiple perspectives to contribute to the features that are implemented. Since the project began with a set of ideas, once these ideas were achieved it allowed for more creativity to become involved in the process. Seeing progress inspires ideas and therefore our team was constantly finding more ways to improve and enhance the current product. Despite the completion of the app for the purpose of this thesis, I plan to continue to develop the app using the methods learned in this process and eventually have a completely final version of “Gymsei.”

Conclusion

It is apparent that there is still much that can be contributed to this application to create something that will succeed in the mobile application market. Through this process I have learned to develop in a mobile context using the methods of Lean UX to ensure the most integrated user experience in the final product. Imitating a real-life client-based development project, developing this application revealed real client concerns and behaviors in a short-term case, such as instances of changed requirements and new ideas. For a first round development I feel that this was a successful project. Using the feedback team to constantly evaluate the progress of the application eliminated the need to second-guess my design and technical decisions and correctly prioritize the features to be implemented. Although many of the suggestions were small, by having the user perspective as a constant factor during development helped to save time that would have been spent creating larger prototypes that may have needed to be entirely changed upon presentation to the client. Executing this process in an environment without a development team offered a different perspective to the Lean UX process. Since I was acting as the project manager, designer and developer, I did not have to deal with managing the actions and cohesiveness of a team and cannot comment on the effectiveness of this process in that kind of environment. However, freelance web development has gained popularity over the years and I think it is important to be able to apply these concepts in any situation where there is a client involved. Lean UX allowed for the effective development of a concept into a reality and has allowed for further development that would not have been explored if this project had been executed based on a concrete set of requirements.

User Guide

Landing Screen

When the user first initializes Gymsei, they will be brought to a screen where they can choose to experience Gymsei with the women's color scheme or the men's.

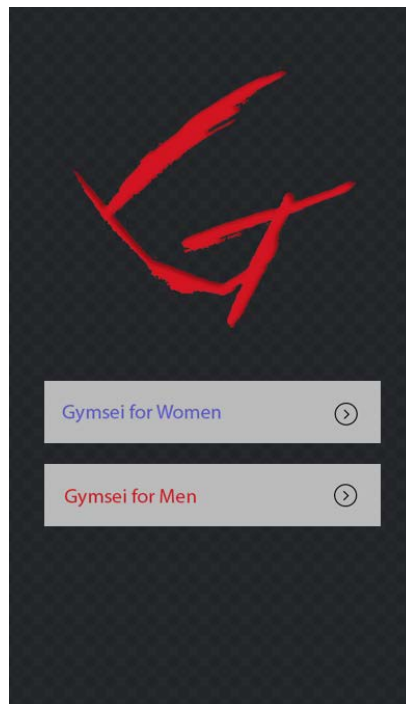


Figure 8-Gymsei initialization screen.

Menu Screen

After selecting an interface option, the user is taken to a menu with three options:

“Workout Builder,” “Choose a Life” and “Choose a Stretch.” The “Workout Builder” button will take the user to a list of all Gymsei workouts that, when selected, will be added to a personalized list of workouts. The “Choose a Lift” button will take the user to a menu of muscle groups to choose from. The “Choose a Stretch” button will take the user to a list of all Gymsei stretches.

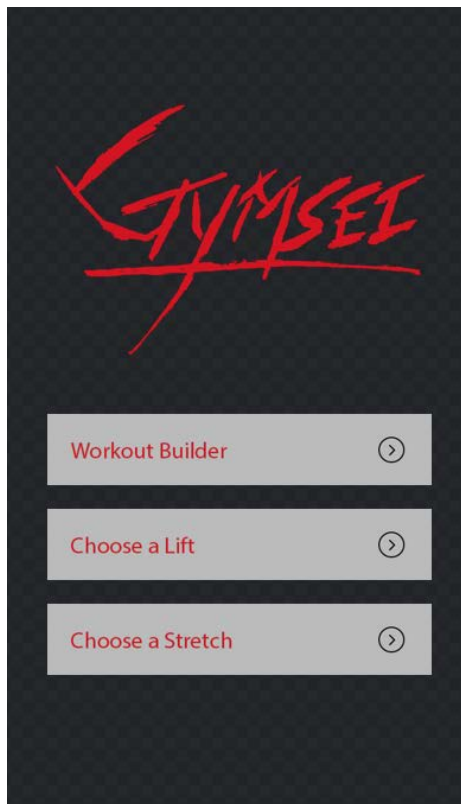


Figure 9-Main Menu Screen

Workout Builder

The workout builder screen displays a list of all gymsei exercises, sorted by muscle group. When the user selects one of these workouts it will be added to the user's personalized "My Gymsei" list of exercises. The user is then directed to the "My Gymsei" screen that will display the added exercise and any other exercises that had previously been added to "My Gymsei." This screen also includes an back button to return to the last screen and a home button to return to the home screen.

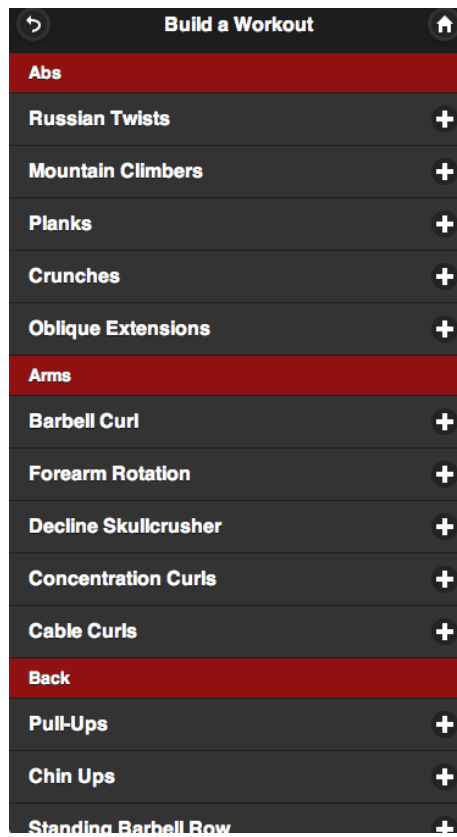


Figure 10-Workout Builder Screen

Choose A Lift Screen

The “Choose a Lift” screen shows a list of different muscle groups that the Gymsei exercises are categorized by. The muscle groups include chest, back, arms, legs and abs. When one of these muscle groups is chosen, another screen displaying all exercises for that muscle group.

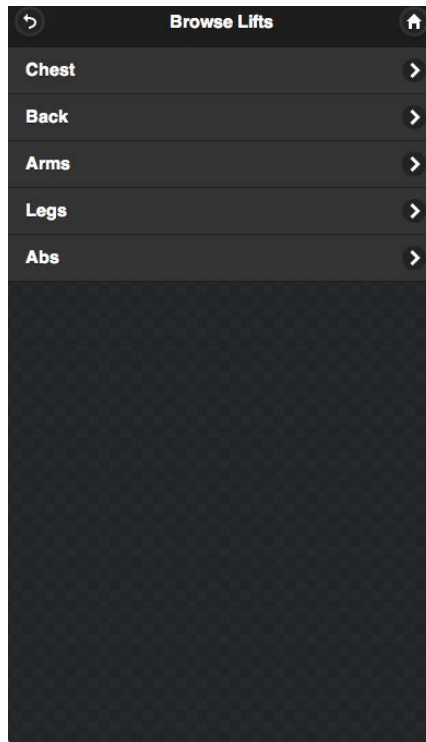


Figure 11-Browse Lifts Screen

Muscle Groups Screen

When one of the muscle groups is chosen from the “Choose a Lift” screen, another list containing all of the exercises associated with the chosen muscle group. When the use selects one of these exercises, they will be taken to the main aspect of the application, which displays the video associated with the chosen workout as well as a menu of option.

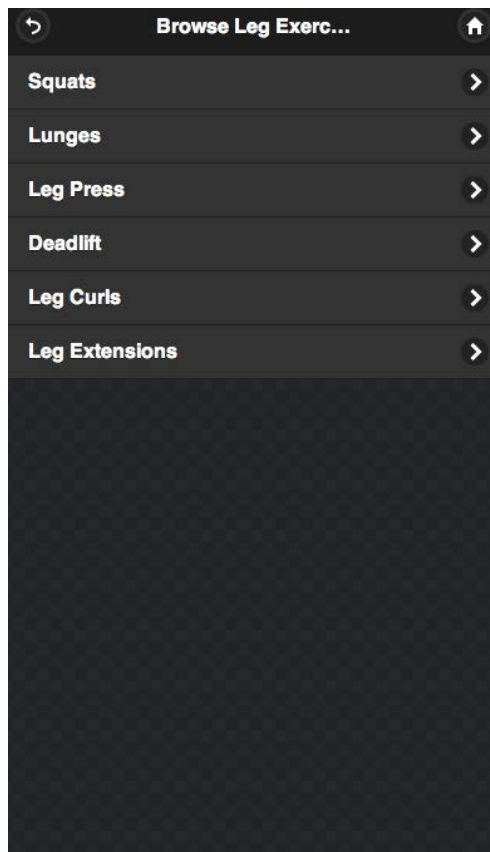


Figure 12-Example of the Leg Exercises screen, results form choosing Legs in the Browse Lifts Screen

Choose A Stretch Screen

The “Choose a Stretch” screen is similar to the “Choose a Lift” screen because it displays a list of available stretches to the user. Choosing one of these stretches takes the user to a screen displaying the video tutorial for the stretch and the associated menu.

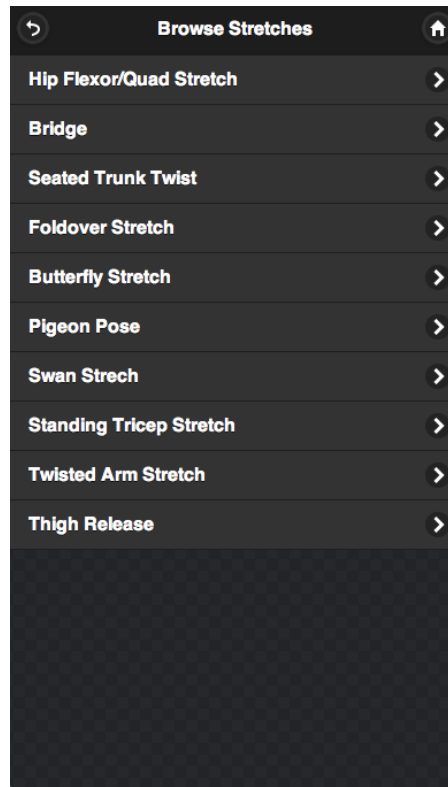


Figure13-Choose A Stretch Screen

Main Screen

The main Gymsei screen displays a video tutorial (associated with chosen exercise) with standard video options including play, volume control, video quality settings and position slider. This screen also includes a bottom navigation with several additional options. The first button with the “G” takes the user to their “My Gymsei” screen that displays all of their added and favorited workouts. The next button, with the music icon, directs the user to a list of their media files. The middle button with the weight icon takes the user back to the “Browse Lifts” screen. The button with the body icon takes the user to an anatomical view of the body where they can visually choose which

muscle groups they'd like to select a workout from. The last button, the plus, adds the current workout to “My Gymsei” and navigates to this screen.

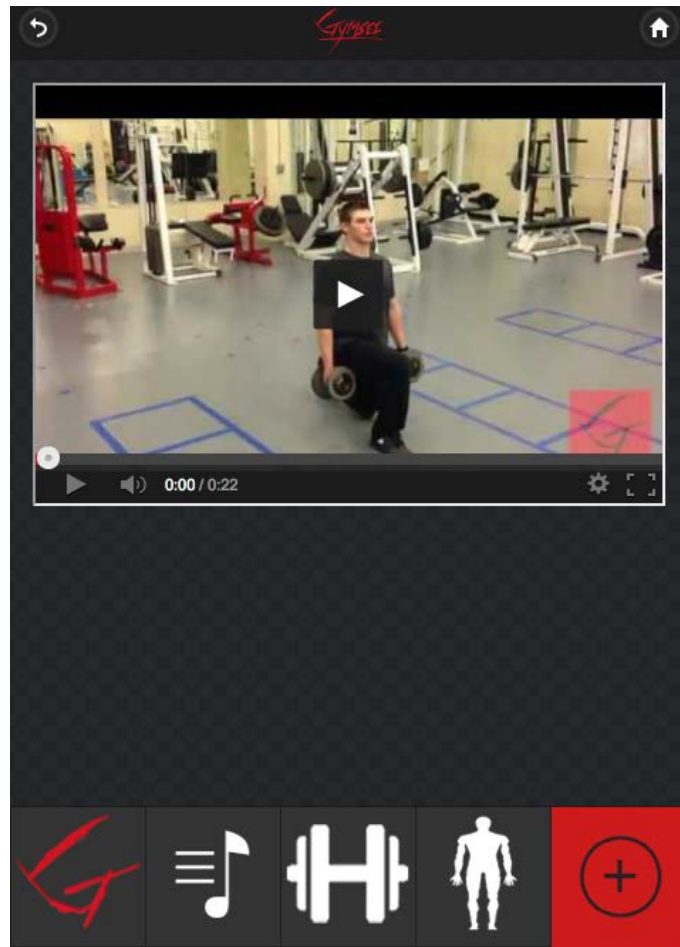


Figure 14-Main Gymsei video player

My Gymsei

The “My Gymsei” screen includes a list of exercises the user has added through the “Workout Builder” or the video interface. Selecting one of the exercises in “My Gymsei” will navigate the user to the video tutorial screen for that exercise. There is an

button in the top right corner with a gear icon that allows the user to modify the current “My Gymsei” list. When this option is chosen, minus icons will appear next to each exercise in the list and if chosen, will be removed from the list. When finished editing the list, the button with the checkmark icon in the upper right corner can be selected to return to the normal “My Gymsei” view.

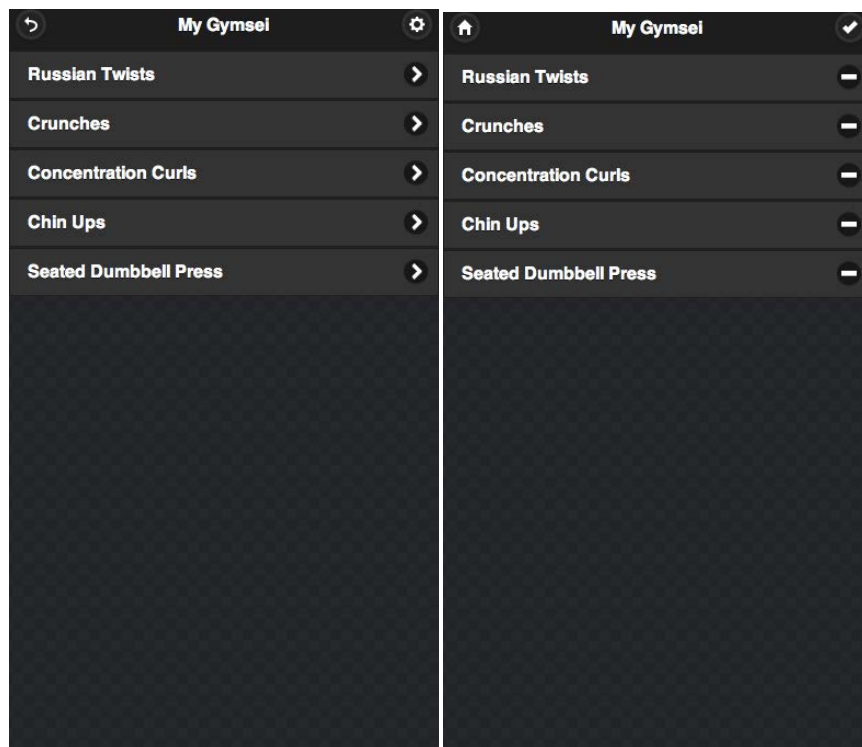


Figure 15 – My Gymsei standard and edit views

Anatomical Screen

The anatomical screen displays a color-coded image of the human body. When the user selects a colored part of the body, they will be navigated to the list of exercises associated with the selected muscle group.



Figure 16 – Anatomical View Screen

Music Screen

The music screen takes the user to a list of all of the music in their native phone library. The user can then select a song to play. By selecting the arrow in the top right corner, the user is navigated to the currently playing song with options to play, stop and alter the location in the song. This screen also displays the song title, artist, current play time and duration.

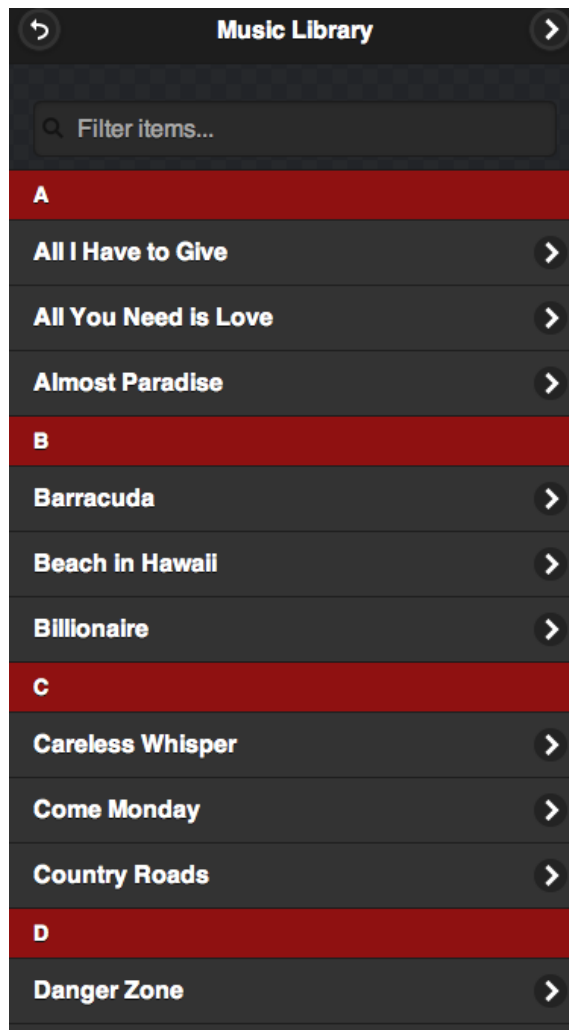


Figure 17 – Music Library Interface

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