

Nutrapp

Smartphone Application Prototype: Alpha Version

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Abstract

It is the responsibility of one group from the European Project Semester based in Vilanova I la Geltrú to work on a brief supplied by the company Nutrapp. Throughout the duration of the European Project Semester, the team work on designing and programming an application that will enable Nutrapp to prescribe advice to their clients. The initial stages of the project focus on research, design and application programming and development, all of which is outlined.

1. Introduction

The relationship society has with food has changed significantly over the last 60 years, with food becoming more readily available, people often find themselves in a situation where they make unhealthy nutritional decisions. To help combat this problem, Nutrapp - a Spanish based company, has been offering people guidance and support.

The Company currently achieves this by implementing a coaching system through their online platform. Here, Nutrapp can encourage their customers to develop healthy eating habits, providing them with expert advice from their nutritional coaches. The company are keen to broaden their target market by exploring new demographics and thus expand their business by reaching more customers. Currently, the only means of providing their services is through a website, the company has identified this as a problem area. Nutrapp would like an application that runs alongside and in conjunction with their existing online platform.

With the help of one team from the European Project Semester program hosted in Vilanova i la Geltru, they aim to fulfil the brief designed by Nutrapp and create an application for the company which will allow the company to operate in the modern age. The team consists of students from around the world, studying various subjects that will offer Nutrapp a varied and broad outlook on the project.

2. Design

The design process starts with research and individual brainstorming of each team members to get the best ideas of the Nutrapp app layout. There are a few criteria the team needs to fulfil. First, the concept is flat, simple and visible, following Google Materials design guidelines. The colour scheme of the app is required to comply with company's existing general colour scheme which is green and black. Team members are allowed to modify the fill and transparency of the colour and company's logo. Lastly, the design should have a fluid user flow, and easy accessibility to the users avoiding clutters of graphic and information.

Each team member needs to propose their ideas within a week and discuss it with the team. The required pages are a login screen, homepage, blog feed, chat interface and setting.

From the market research, our approach is to be motivational and encouraging. The design has to be psychologically attractive to users and avoid using any design that will lead to negative vibes. To comply with the company's colour scheme, the colour of the font will be black and white.

The results from both method, brainstorming from team members and market research, we create the general layout of the login page, homepage and blog feed. Other pages will be based on these three pages. The layout has five common criteria. First, follow material design guidelines, every page has a top bar with page's title and back button with a fixed green background (#93C01F) and must facilitate on-screen Android navigation buttons, fixed dimension of the top bar and lastly, the font used is Roboto.

3. Chat

As the planning is to use an open source chat, three criteria are taken into consideration before we choose the projects.

- a. Free commercial license
- b. Expandable database owned by the company
- c. Customizable

The reasons these criteria are chosen are Nutrapp wants the app done with minimum cost, protect users' data, not sharing it with the third party and follow the design theme that Nutrapp has established.

Chat SDK is the perfect candidate for the project. Chat SDK is developed by chatsdk.co team and published publicly under MIT license. It is an open source project that provides instant messaging framework for Android and iOS and has their key principles that satisfy our criteria such as free, full data control and quick integration. [1]

It contains a simple chat system that has a private thread for both individual and group, public group thread and user profile. Users can access the chat feature by using email, Facebook and Twitter to register. It also has the ability to share images in the thread. Chat SDK are using Google's Firebase to manage the cloud messaging system as well as authentication and

storage. In addition, it is modular. So, it can be added to an existing Android project and also has a number of additional modules that can be installed in the chat itself such as typing indicator, audio and video messages and read receipts. [2]

As this project owned by Nutrapp, a new Firebase account is created and linked to the project. To enable Facebook and Twitter authentication, developer accounts for both platform are created, and they are linked by providing the app's hash keys. Then the accounts generate secret API keys to be used in the project.

The interface provided is not consistent with the current Nutrapp theme which is black and green. Hence, a few items such as theme colour, font and speech bubble design are changed to satisfy the company's needs.

4. Webview

Android Studio provides a tool called WebView. The team decided to use it due to the fact that many of content is from the company's website. The draft was designed and used for all of the pages.

Features used:

- protection against closing an application when clicking any link
- navigation inside the application is restricted only to nutrapp.es domain, for different domains external browser has to be used
- going back using the 'back' button
- refreshing page by pulling the screen

5. API

The group faced some potential issues when trying to access data from the web. We originally planned to incorporate the information presented on the company's website, as well as having those who register a Nutrapp account online and through the application, to be linked.

It has been discussed that the best way to connect both the website and the application is using an Application Programming Interface or API. This allows the functions and data from the already existing website to be linked to the application. However, an API must be developed for each internet site, and as one does not currently exist for the Nutrapp website, another approach had to be taken.

The group's solution to this problem was creating our own form of an API. To link the content on the website to the application, one must take the code used to create the website and make it readable on the application. To do this you must convert the website code (which is formatted in HTML) to a form readable by the application (this is known as JSON). We used a webpage to convert the HTML code to JSON. Once the JSON code was available, we put the code in a document in Dropbox. Dropbox was used in order to make the file accessible and easy to change and/or update. This allows employees from Nutrapp, future application developers, and our group members to easily edit the content of the application at any time.

As this process is somewhat advanced for our group's programming knowledge we only used this method in one section of the application. It can be found under the 'Services' button. We aim to further improve the application by adding this method to all sections of the application in the future.

6. Finished Interface

The final product was designed to be simplistic yet, useful and informative. Users will find that the application opens with a three second view of the company logo and name. This is followed by the application homepage. The homepage is designed with six buttons. These buttons consist of the following categories:

- Chat
- News

- Education
- Recipes
- Services
- Login
- Survey
- About

All, but three buttons use a programming feature called webview. Webview allows the user to access a website page straight from the application. This is an easy way to connect the website with the application. The News, Education, and Recipes buttons take the user to the website page associated. The News buttons is connected with the news blog on the website titled "Actualidad Nutrapp". Similarly, the Education button takes the user to the website page titled "Actualidad: Nutrapp Educa", as well as the Recipes button, which gives the user access to the recipes blog titled "Cocina Saludable Nutrapp". The user can now access each of these blogs right from the application.

The Login and Survey buttons work in a similar fashion. However, instead of giving the user access to a blog, they take the user to an interactive webpage. The Login button gives the user the ability to log in to their Nutrapp company account. The Survey button takes the user to a free questionnaire the company provides in order to learn more information about a user's healthy eating habits.

The About button simply displays important information regarding the Nutrapp company, such as contact information and the location.

The chat gives users the access to an open chat with both others users and their nutritionist. The users have the option to create a login or register an account where they can choose a username and profile picture.

Finally, the services button brings the user to a page listing the varying services offered by the Nutrapp company. The user can

click on a desired service and learn more information such as the cost and description.

The application uses information from the website, therefore, most of the text is displayed in Spanish. However, the text not linked to the website (such as button names) will be displayed in the language used on the client's phone. If the user's phone is in another language other than English or Spanish the application will display the text in the default language of Spanish.

7. Success and Challenges

There were many challenges as well as successes found during this project. A fully functional prototype was created with a functioning chat. The chat was the most important aspect of the new application, as the company's main service is online communication with their customers regarding nutritional habits and practices. However, the programming process proved to be quite difficult in some areas.

First, the Chat is developed with an older Android system, the Android target build version needs to be lowered to ensure the functionality of the app. Some items within the application may be affected by this.

Second, At the beginning of the project, the company requested for a combined database between the chat's and website's login database. However, it appears to be impossible because both databases are stored on different platforms. With this reason, an agreement to use different database was achieved with the company.

Finally, as mentioned above, there is no API for the website to link it with the application. Therefore, an API was simulated using Dropbox. This was a quick fix, however, a proper API should be developed so the website and the application can be linked in all aspects.

Through compromise and problem solving the group worked through the challenges

and created a successful Nutrapp Application prototype.

8. Future Improvement

We wish to improve our application in a number of ways. These improvements include the development of the application in iOS (for non-android users) as well as a tablet version so users have the opportunity to access the application on all of their smart devices. We also aim to team up with an android developer to ensure the application is improved in a professional format. These updates include merging the application chat with the online website chat and improving the chat with features such as audio and video messages, location sharing and read receipt.

Finally, we wish to upgrade the database. The chat database is stored in Google Firebase with a free account. The database can be enlarged by subscribing to a Firebase premium account so the capacity of the connection per day can be upgraded to more than 10,000 connections. The JSON files for the services is hosted in Dropbox and as a result, the connection to fetch the data decreases in speed. If the files are moved to another host, the Nutrapp website for example, it can improve the user experience.

9. Conclusion

The team managed to fulfill the requirements by providing the fully functional prototype.

10. References

[1]"chat-sdk/chat-sdk-android", GitHub, 2017. [Online]. Available: <https://github.com/chat-sdk/chat-sdk-android>. [Accessed: 07- Jun- 2017].

[2]"Android: Quickstart - Chat SDK", Chat SDK, 2017. [Online]. Available: <https://chatsdk.co/docs/android-quickstart/>. [Accessed: 07- Jun- 2017].

[3]"Nutrapp", www.nutrapp.es, 2017. [Online]. Available: <http://www.nutrapp.es>. [Accessed: 07- Jun- 2017].

[4]B. WebView, "Building Web Apps in WebView | Android Developers", [Developer.android.com](https://developer.android.com), 2017. [Online]. Available: <https://developer.android.com/guide/webapps/webview.html>. [Accessed: 07- Jun- 2017].