

Mobile Application for Controlling Calories – “Calories Counter”

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Abstract—A brief overview of available architecture solutions for calories counter -based applications and highlighting problems of their using. Some architectural solutions on developing of ‘Calories Counter’ android application, which solve these problems, are proposed.

I. INTRODUCTION

Being a healthy person is fashionably nowadays. People start thinking about their food and take care about the shape more and more. And this is not in vain, because taking care about the health is leading to increasing the tone of body and people’s mood. People start to use services, which can count the eaten calories in a few minutes more and more. These services allow being always familiar with user’s daily ration and making his diet perfect. Often, these services are web-based applications, so there is a problem of using them (for example, if user has no network connection). To solve this problem the android application “Calories Counter” was developed, which is available 24 hours a day, regardless of the person’s location. The application can work without and with Internet connection. The application allows users don’t be worry about Internet traffic when it makes searching products or counting calories.

II. MAIN PART

The general architecture of the application is presented as three releases: Basic, Rel.A, Rel. B. The Rel.A, Rel. B are the extended release of basic version. They use Internet connection to store the personal data. The Basic application ‘Calories Counter’ has 4 modules which are aimed to help the user in keeping track of his weight (Fig.1). The first module is “Chart of calories”(Fig.2). It allows the user to choose products that he has eaten, or to choose products that he will eat depending on his available calories. Also there is an additional information about the eaten fats, proteins and carbohydrates, which allows user to have all the necessary information for keeping himself in shape.

User don’t need to make a records about the date in the application by himself, the ‘Calories Counter’ synchronizes with the phone date.

Another good idea is to prepare data for using in application while it is opening. All the data, which are in need for the comfortable use of ‘Calories Counter’ are downloaded from DB to ArrayLists and kept there while the application is

working. This decision decreases the time of waiting the displaying information, so allows user to move between activities easier and more quickly.

The second module is Calories calendar (Fig.3). It allows the user to monitor the eaten calories at all times of using the application. This feature is useful because this way user can always know the cause of losing or gaining weight.

The library MPAndroidChart is used in the ‘Calories Counter’. It allows to make a diagram more understandable for users.

Third module is “Viewing the product catalog” with complete information about calories(Fig.4). This feature is useful for those who plan their food shopping. And fourth module is “Advices” that can help the user to keep himself in shape anytime (Fig.5). When user opens the application “Calories Counter” at first time, it gets acquainted with the user, learns his weight and growth, it allows the application to draw conclusions about the daily calories.

It should be recorded that the requests to database have a special type PreparedStatement. It is very important when there is an opportunity to type the information by the user. Firstly, this decision protects all the data in the ‘Calories Counter’. Secondly, it protects user from typing risky constructions which can kill the application.

There is a Table I that shows a comparisons of the known applications which have a similar functionality (A - MyFitnesspal [1], B - Simple Calorie Counter [2], C - Diet & Food Tracker - SparkPeople [3]) with the D - “Calories Counter”.

In the Table I we use reductions: “Dialog” - Dialog with the user, “Description” - Detailed description of daily calories, fats, proteins, carbohydrates, “Calendar” - Calories calendar, “Multiple” - Multiple accounts, “Languages” - Different languages, “Info”- Showing quick info about product, “Balance” - Showing the balance of the calories, Friendly - Friendly interface (1-5 points)

The ‘Calories Counter’ includes everything that is missing in other applications. For example, using detailed information about the product allows the user to make a choice between the products by the necessary parameters (fats, proteins, carbohydrates) to make his daily diet (Fig. 6).

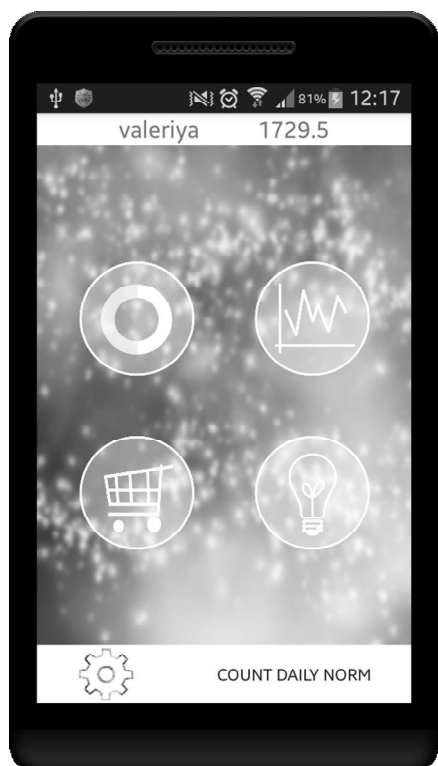


Fig. 1. Main window

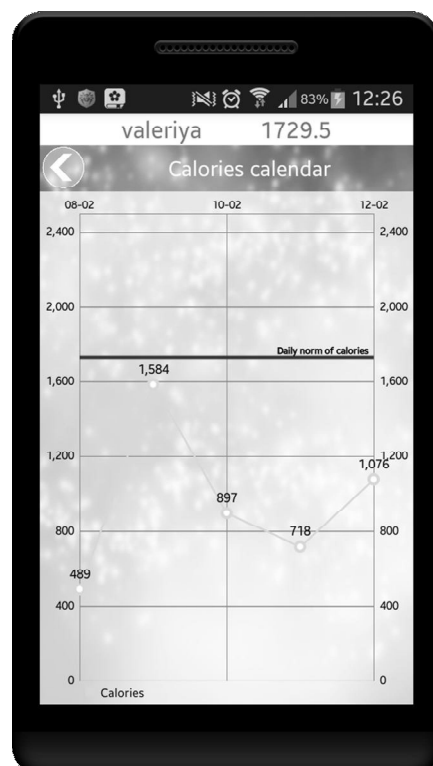


Fig. 3. “Calories calendar” window

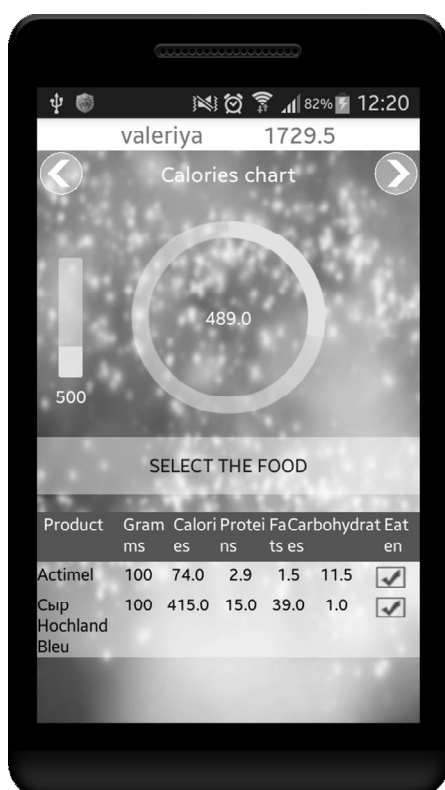


Fig. 2. “Chart of calories” window



Fig. 4. “Viewing the product catalog” window

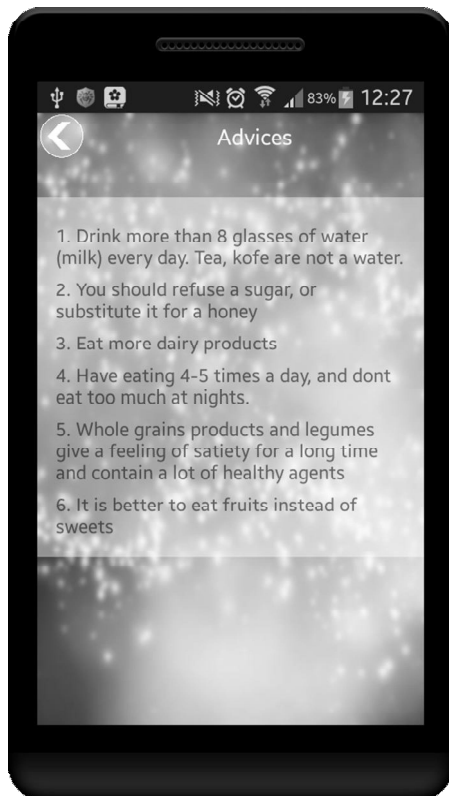


Fig. 5. "Advices" window

Продукт	Калории(100 гр)	Белки	Жиры	Углеводы
Ангурия (Антильский огурец)	44.0	1.8	1.3	7.6
Арракча	60.0	0.9	0.1	17.1
Артишок	28.0	1.2	0.1	6.0
Баклажан	24.0	1.2	0.1	4.5
Баклажан консервированный	49.0	0.9	0.7	7.3
Баклажанная икра консервированная	148.0	1.7	13.3	5.1
Баклажанная икра свежая	90.0	0.6	7.0	6.0
Бамбук листья	32.0	2.0	0.0	4.0
Бамбук побеги варенье	12.0	1.5	0.2	0.9
Бамбук побеги	19.0	1.7	0.4	1.8

Fig. 6. Detailed information about the products

TABLE I. COMPARISON OF DIFFERENT CALORIES-BASED APPLICATIONS

Name	Applications			
	A	B	C	D
Dialog	Y	N	Y	Y
Description	N	N	N	Y
Calendar	N	N	N	Y
Multiple	N	N	N	Y
Languages	Y	N	N	Y
Info	N	N	N	Y
Bbalance	Y	N	Y	Y
Friendly	4	2	3	5

Calendar of calories shows daily eating calories on the one graphic. User can use the graphic to control his calories and weight. And using multiple accounts helps the user to make the process of monitoring calories for the whole family more simple. The application does not contain too much information, which could confuse the user, thereby it is making the interface more intuitive and friendly. This version is independent of the Internet connection.

'Calories Counter' Rel. A, Rel.B allow to use the Internet. Rel. A has a useful feature that makes the connection between user and his nutritionist easier. User don't need to call or message his doctor for sending the information about daily meals by himself anymore, the application can send this to doctor's mail by itself. User should just set a time for sending and a doctor's email.

This opportunity has realized by using the library JavaMail API and the Gmail authentication. In this version of the application, all temp data store on the phone until it sends to the email.

Rel. B (now it is in progress) could store personal date at the cloud resources. This function could organize the access service to the stored data. The application at the cloud side generates the html reply for the remote web request. The data are presented in tables for the main controlled variables. All the data will store in the cloud to not make mess to the phone user and make sending more quickly.

III. CONCLUSION

To sum up, now it's possible to conclude, that the application "Calories Counter" solves the problems that have existed in other mentioned applications. It is an opportunity to make data maximum that visualizes and allows users to work with the application in an easier way and make a minimum of actions while adding products to the daily product list. There is a plan for a next version of application. The next version will

allow users to monitor their weight as well as calories by using graphics, and will be closer to the user because of making notification about the meal necessary for him, because the uneven meal leads to instability of weight. And the next version will allow user to add his own food by editing or scanning bar-codes.

The next version of the 'Calories Counter' will expand the opportunity of working with the nutritionist. There will be a web service with the common profile for user and the doctor. So if user will synchronize his application with the profile, he

will be able to receive a list of daily meals from the nutritionist through the Internet everywhere.

REFERENCES

- [1] Description of the program MyFitnessPal.
<https://play.google.com/store/apps/details?id=com.myfitnesspal.android&rdid=com.myfitnesspal.android>
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<https://play.google.com/store/apps/details?id=com.rarepebble>
- [3] Description of the program Diet & Food Tracker - SparkPeople
<https://play.google.com/store/apps/details?id=com.sparkpeople.androidtracker>