The Investigation of "MissFit" as Android – Based Daily and Healthy Drink Application

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ABSTRACT

The imbalance of caloric intake that enters the body will lead to diseases and health problems that hinder human productivity. One of the efforts taken to balance the intake of calorie consumption is to have related information. Along with the times and technology that can be grasped by almost everyone in Indonesia, various information can be easily obtained. The purpose of this study was to develop and determine the feasibility of a daily healthy drink menu application by providing calorie information and the dose of drinks that can be consumed based on the android " MissFit. " The development of the MissFit application uses the ADDIE method whose stages include 1) Analysis, 2) Design, 3) Development, 4) Implementation, 5) Evaluation. The results of this study are based on the pie chart; understandability is stated to be 75% good and 20% perfect, while Learnability states 50% is good, and 50% is perfect. On the pie chart, the operability of 50% is good, and 40% is perfect, while the Functionality is 60% good and 40% perfect. The application's content is stated to be 60% good and 40% perfect, and 50% of the respondents are from the State University of Surabaya, and 50% are outside the State University of Surabaya. So it can be concluded that the investigation of applications that provide calorie information, as well as the dose of healthy drinks that can be consumed daily based on Android, it is necessary to design an application that is made more attractive and easy to understand so that users feel interested and use it effectively easy. The "MissFit" application was feasible with excellent and perfect criteria of 96%.

Keywords: Health apps, Calorie information, Android

1. INTRODUCTION

Eating and drinking are an absolute necessity carried out daily to fulfill the body's needs to carry out activities[1]. The body needs body fuel for various activities. The action in question is our working capacity every second[2]. The power required for energy fulfillment in daily activities is calories. A calorie is a general term for the unit of energy in the metric system. Our bodies need calories from the food we eat as a source of energy to carry out daily activities. Without enough calories, we will feel weak like a car without gasoline[3]. Calories can also be interpreted as a unit used to measure the value of energy or energy, the calorie content in a food depends on the content of carbohydrates[4], protein. Sources of calories can come from food and drinks[5] that we consume with different nutritional content such as fat, carbohydrates, protein[4], etc. Each person's calorie needs vary, depending on age, height, weight, and activities carried out every day. The balance of calories[6] in the body is essential to affect a person's

health. Lack of calories can cause malnutrition, while excess nutrition can cause obesity. Obesity is an imbalance between calorie consumption and energy needs, where consumption is too much compared to consumption[7]. Body weight[8] is a significant public health problem associated with several chronic conditions, including heart disease, hypertension, hyperlipidemia, diabetes, hyperinsulinemia, and cancer. Meanwhile, if the body lacks calories, it will also cause the body to become weak and underweight[9].

One of the efforts to balance the number of calories consumed by the body is to consider calorie intake. Taking into account the daily calorie needs of the body is very important. Usually, people will go on a diet[10] or adjust their diet to regulate the number of calories in the body. There are many kinds of diet methods used by humans, and one of them is through a technology-based approach[11][12][13][14][15]. One of the ways to calculate the amount of calorie intake that will be consumed is by using an application specifically

designed to fulfill information related to the calories of food and beverages consumed daily. The MISFIT app is one of those apps designed to take into account the calorie intake in drinks.

MISFIT is a daily healthy drink menu application that provides calorie information and the number of drinks that can be consumed. This application is based on Android. The name MissFit comes from the acronym for Daily and Healthy Drinks (FIT). MissFit means "not right" because this application is inspired by the dose of drinks that do not match your needs. Based on the above explanation, research was carried out to develop applications that provide information related to calories in healthy drinks consumed daily and the dose of drinks that can be taken into consideration for consumption.

2. METHODS

The method used in assessing the MissFit application is ADDIE (Analysis, Design, Develop, Implement, and Evaluate). ADDIE is a concept in product development, a series of stages that have their respective goals, which will be explained in detail as follows[16]:
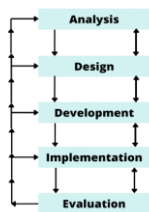

Figure 1. ADDIE Model stages[17]

The ADDIE (Analysis, Design, Develop, Implement, and Evaluate) model has similarities with the Waterfall model in software development related to application development theory. The following are the stages of the ADDIE model, which include Analysis, Design, Develop, Implement, and Evaluate[17]:

2.1. Analysis

Improvement to achieve excellent and maximum goals. The system analysis stage is the stage where the description of a complete system in components to identify and evaluate problems in the development of applications that provide information related to the nutritional value of healthy drinks consumed daily, especially information pertaining to the number of calories based on Android, can be carried out. In this analysis stage, a needs analysis process is carried out for the system on the application of information on the number of calories for healthy drinks based on Android.

2.2. Design

At this stage, a design will be made on the system's daily healthy drink menu by providing calorie information and the number of drinks consumed. In this design, it is expected that users can quickly and easily access information related to the desired beverage product. In-app web views daily healthy drink menu by providing calorie information and the number of drinks that can be consumed. There needs to be a design that is made attractively but still easy to use, such as display or specific information such as information on calories and quantities that can be consumed in drinks to feel comfortable and understand when accessing or using them.

2.3. Develop

In this stage, a process is carried out to realize the design steps that have been designed into an application. The development stage can also be said to be the coding stage. What is done at the development stage is to analyze the users on the system and what each user does to the system.

2.4. Implement

At this stage is the step where testing of the application is carried out daily healthy drink menu by providing calorie information and the number of drinks that can be consumed, which has been made in the development stage. Testing for this application using software standards that have been provided or already exist.

2.5. Evaluate

This stage aims to determine the suitability and success of the evaluation of the results of the implementation of the application that has been made. The application that has been made can be said to be successful if it is by the criteria and standards that have been previously set.

3. RESULTS AND DISCUSSION

This research produces a product in the form of an application that provides calorie information and the dose of healthy drinks that can be consumed daily, which is named MISFIT. This application is based on Android on a web page and can be accessed via a link or barcode scan. The development of this MISFIT application uses the ADDIE development model, which consists of several stages as follows:

3.1. Analysis

(1) the analysis of mobile phone users is increasing every year, (2) analysis of situations or circumstances where there are currently many diseases caused by an imbalance in caloric intake sourced from food and beverages consumed daily, and (3) market analysis of healthy

beverage products is back in vogue to meet nutritional needs during the pandemic.

3.2. *Design*

(1) designing the concept of an application model of the number of calories and the dose of healthy drinks that will be developed, (2) looking for information about the number of calories and the limit on the number of doses that can be tolerated by the human body from various works of literature, (3) designing the appearance of the application daily healthy drink menu by providing calorie information, as well as the number of drinks that can be consumed which is based on Android with a design that is made as attractive and efficient as possible so that users can use the application comfortably.

3.3. *Develop*

(1) The development and manufacture of the MISFIT application are based on a design that has been designed through glideapps.com in which many templates can be used for free, making it easier to create applications and slightly change the appearance of the template to match the design and concept of the application model. the following display of applications that have been developed:
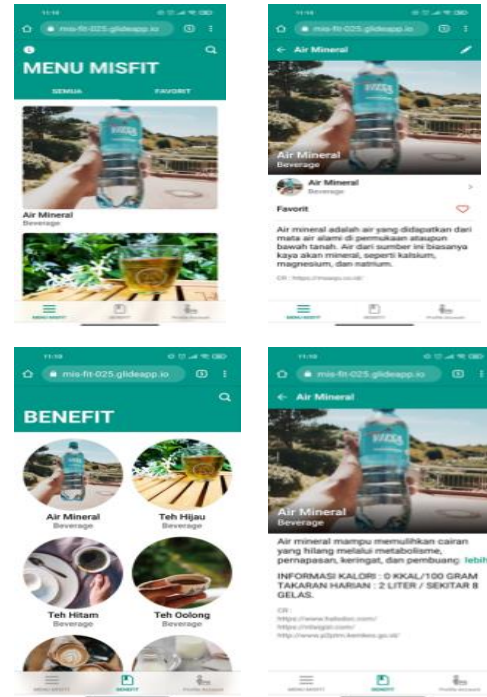

Figure 2. MissFit App

Source: MissFit App *(*https://mis-fit-025.glideapp.io/)

3.4. *Implement*

(1) Testing the application on the user directly, (2) Carry out the validation process or application feasibility by users and experts.

3.5. *Evaluate*

(1) Create and process a questionnaire about application eligibility, (2) Revise if something doesn't fit

Table 1. Eligibility Criteria[18]

Information	Answer
Very good	20% – 50%
Well	50% - 75%
Neutral	5% - 10%
Not good	0%
Very Not Good	0%

Table 1 shows the average scores that fall into the eligibility criteria are in the excellent category – outstanding category, with the following averages:

$$\bar{X} = \frac{95\% \, 100\% \, 90\% \, 100\% \, 95\%}{5} = 96\% \qquad 1)$$

4. QUESTIONNAIRE TESTING

There are several testing questionnaires[19], such as Nielsen's Attributes of Usability Questionnaire (NAU)[18]. Still, this questionnaire is not used because ISO 9126-1 is sufficient and similar to NAU to review an application. This test and questionnaire aim to know the quality of the application made whether it has reached feasibility according to the standard to the respondent concerned or not. Respondents involved in this test came from various backgrounds, with the number of respondents as many as 20

people. Questionnaires and grids conducted from testing in this study were taken based on the ISO 9126-1 standard. There are several characteristics in testing software quality, consisting of the variables Understandability, Learnability, Operability,

Functionality, and Content[20]. The following are the characteristics of ISO 9126-1 in the table, along with the criteria and results. Table 2 shows the indicators of ISO 9126-1 and information on what kind of question each hand.

Table 2. Testing Grid[20]

No	Variable	Information
1	*Understandability* (Understood)	Capabilities in software that are easy for us to understand
2	*Learnability* (Learned)	Skills in software that are easy for us to learn
3	*Operability* (operated)	Capability in software that is easy to operate
4	*Functionality* (Function)	Capabilities in software that provide accurate Functionality, security, appearance, and data management as they are used
5	*Content* (content)	The ability to define the truth, adequacy, suitability of the contents contained therein.

The appearance of the "MISFIT" application is attractive so that it is easy for users to understand
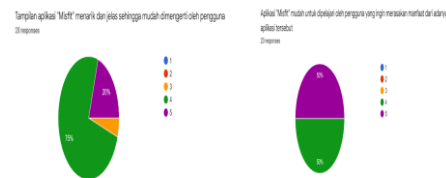

Figure 3. Pie Charts Understandability and *Learnability*

Based on the pie figure 3, it can be seen that of the 20 respondents who think Neutrally as much as 5%, 75% who think Good and 20% think Very Good. The "MISFIT" application is easy to learn for users who want to experience the benefits. Based on the pie above, Learnability of the 20 respondents who think Good as much as 50% and 50% think Very Good. The ease of the "MISFIT" application to be used/operated by users in daily life.
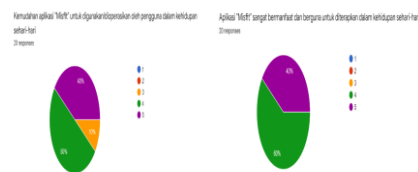

Figure 4. Pie chart *Operability and Functionality*

Based on the pie figure 4, it can be seen that of the 20 respondents who think Neutral, as much as 10%, 50% who think Good, and 40% think Very Well. The "MISFIT" application is handy and helpful to be applied in everyday life. Based on the pie above, it can be seen that *Functionality* of the 20 respondents who think Good as much as 60% and 40% think Very Good. The contents of the application "MISFIT: which includes the correctness, suitability, and adequacy of the material contained therein.
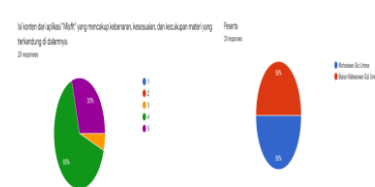

Figure 5. Pie chart *Content* and Respondent Composition Pie Chart

Based on the pie figure 5, it can be seen that of the 20 respondents who think neutral as much as 5%, 60% feel good, and 40% think very well. Based on the pie diagram above, it can be seen that the Respondent Composition Pie Chart the background of respondents who are Universitas Negeri Surabaya (Unesa) Nutrition Students is 50%, and respondents who are not Unesa Nutrition Students are 50%. Based on the test results above, it can be concluded that applications that provide calorie information, as well as the dose of healthy drinks that can be consumed daily based on Android, are considered feasible by respondents with an average value of excellent and excellent categories of 96% according to respondents.

5. CONCLUSION

Based on the results of the explanation above, it can be concluded that the investigation of applications that provide calorie information, as well as the dose of healthy drinks that can be consumed daily based on Android, it is necessary to design an application that is made more attractive and easier to understand so that users feel interested and use it effectively easy. As well as the need for the development of the contents of the application such as adding other beverage information that has not been included of the 20 respondents who came from Nutrition Students and not Nutrition Students, they thought that the "MISFIT" application was feasible with

good and perfect criteria of 96%. Suggestions that can be used as input are developing more attractive designs and adding more beverage information content types.

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