

Development of Gastronomic Tourism Guide Application

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Abstract: The purpose of this research is to identify the needs and desires of gastronomic tourists in Bandung City (to build personalization) to be further compiled as a recommendation for gastronomic tourism in Bandung City which is practical, interactive and advanced by utilizing technology. The method used is research and development. The development procedure refers to the ADDIE (Analysis, Design, Development, Implementation and Evaluations) model. Field data collection used a questionnaire technique which was distributed to 37 gastronomic tourists in Bandung City via Google Form. The final result of this research is a gastronomic tourism guide mobile application that provides recommendations based on the needs and desires (personalization) of tourists in Bandung City.

Keywords: Gastronomic Tourism, Mobile Application, Personalization, Bandung City

1. Introduction

The development of understanding that culinary is an expressive form of community identity and culture build gastronomic tourism. Gastronomy is an art in culinary that focuses on human behavior in choosing ingredients, sampling, tasting, serving, searching, researching, studying and writing about food related to ethics, etiquette and nutrition [1]. Bandung City has the potential to be a gastronomic destination. The results of study show that the main attraction of Bandung City by 80% lies in its culinary [2]. Travels decision are driven by internal factors such as health, time, finances and external factors such as location, weather, festival events, etc. [3]. Tourists will go through four important phases before traveling: (1) considering their needs and desires (2) seeking information (3) preparing personal needs (4) evaluation of satisfaction [4]. Combine the needs and desires when offering a tourism product will certainly increase tourist interest towards the product and shorten the selection time.

Needs are everything that humans need to achieve prosperity in life while desires are wills and hopes. Needs and desires are driven by self-motivation [5] which are different for each person. These differences cause the needs and desires building individual personalization. One of the basic human nature is to like the convenience of technology especially after a pandemic situation to make everything more practical and reachable even with a long distance [6].

Therefore, it is necessary to build and develop a gastronomic tourism guide application based on the needs and desires of tourists in Bandung City to facilitate the process of selecting and maintaining food intake during gastronomic trips in order to make it practical, automatic and advanced (technology-based) which is the purpose of this research

2. Literature Review

A. Gastronomic Tourism

Tourism is a journey of a person or group with the intention of deepening knowledge, having fun in a temporary period [7,8]. Gastronomic tourism refers to tourists visiting the tourism destination specifically for the culinary. There are nine components of gastronomic tourism: (1) philosophy, history, tradition and social (2) ingredients (3) tasting (4) serving (5) studying, researching and writing about food (6) unique food experience (7) nutrition (8) ethics and etiquette (9) cooking/culinary [9].

B. Guide Application

According to the executive computer dictionary, application has the meaning as a problem solving that uses one of the application data processing techniques which usually refers to a desired or expected computation or expected data processing [10,11]. Guidebooks are books that contain principles, procedures, description of basic materials and learning models [12,13]. Following the direction of changing times driven by technological developments, guide media in the form of books can be transferred to technology-based applications which are then referred as guide applications [14]. The design of media, content and information provided must be suitable for the user or user friendly [15].

C. Microsoft Excel

Microsoft Excel is a spreadsheet program from Microsoft Office. The main use of Microsoft Excel is to process data in the form of numbers (quantitative) [16]. The data that has been entered can be analyzed and processed to get desired reports. Microsoft Excel is made up of four objects:

- Workbook, the largest object that contains several worksheets that are stored as files.
- Worksheets/Sheets, that is useful in processing data which is called a sheet.
- Range, a collection of columns, rows and cells that are accommodated by a sheet. In addition to the cell range, a range sheet consisting of several selected sheets can also be formed.
- Cell, the intersection of column and row. The cell name is a combination of column and row names [17].

D. Appsheets

Appsheets is one of the tools provided by Google as a web and mobile application development platform without coding. Sources of data in making applications can be various such as Google Spreadsheet, Microsoft Excel, Cloud SQL, Salesforce and other similar connectors. Applications that are later created are dynamic with automated workflows that can be used across devices or mobile browsers [18].

3. Methods

The research was conducted using research and development methods and refers to the model developed by Dick and Carry called ADDIE (Analysis, Design, Development, Implementation, Evaluation) [19,20]. The data collection techniques are: (1) documentary, collecting data through written documents, recorded or accessed online (2) questionnaires, collecting data in the form of questions list which will be answered by respondents [21]. The questionnaire used in this research is the closed one with a likert scale to measure the opinions, attitudes and perceptions of respondents [22].

Application development is using Microsoft Excel and Appsheets. The processed data is related to personal data (age, gender, height, weight, sleep duration, activity, taste), nutritional status data, disease and allergy history data, food nutrition and restaurant data

4. Results

A. System Analysis

Application development as a problem solution is carried out through small components of the analysis stages:

1) Problem Analysis

The main problem to be analyzed is how to design a system that can help gastronomic tourists of Bandung City have more comfortable and easy gastronomic trips in Bandung City. At the early stages, a preliminary study was conducted on 37 respondents who were gastronomic tourists of Bandung City. The survey shows that to carry out gastronomic trips in Bandung City, there are two factors that are always attached: the needs factor (97.1%) and the desires factor (82.9%), so the system design must be able to facilitate these two factors.

2) Needs Analysis

The application in this research was built with a specific purpose to provide guidance (recommendations) for gastronomic tourism based on the needs and desires of tourists in Bandung City (building personalization) so there are functions that need to be possessed in achieving these goals :

- Build user's (gastronomic tourists of Bandung City) personalization.
- Displays the results of daily nutrition calculations.
- Provide menu and restaurant recommendations that suit the needs and desires.

B. Application Design

The design stage is carried out after getting enough information and references from the analysis stage which is used to design a system and build application logic. The system design and system logic is described through a flowchart or program flow.

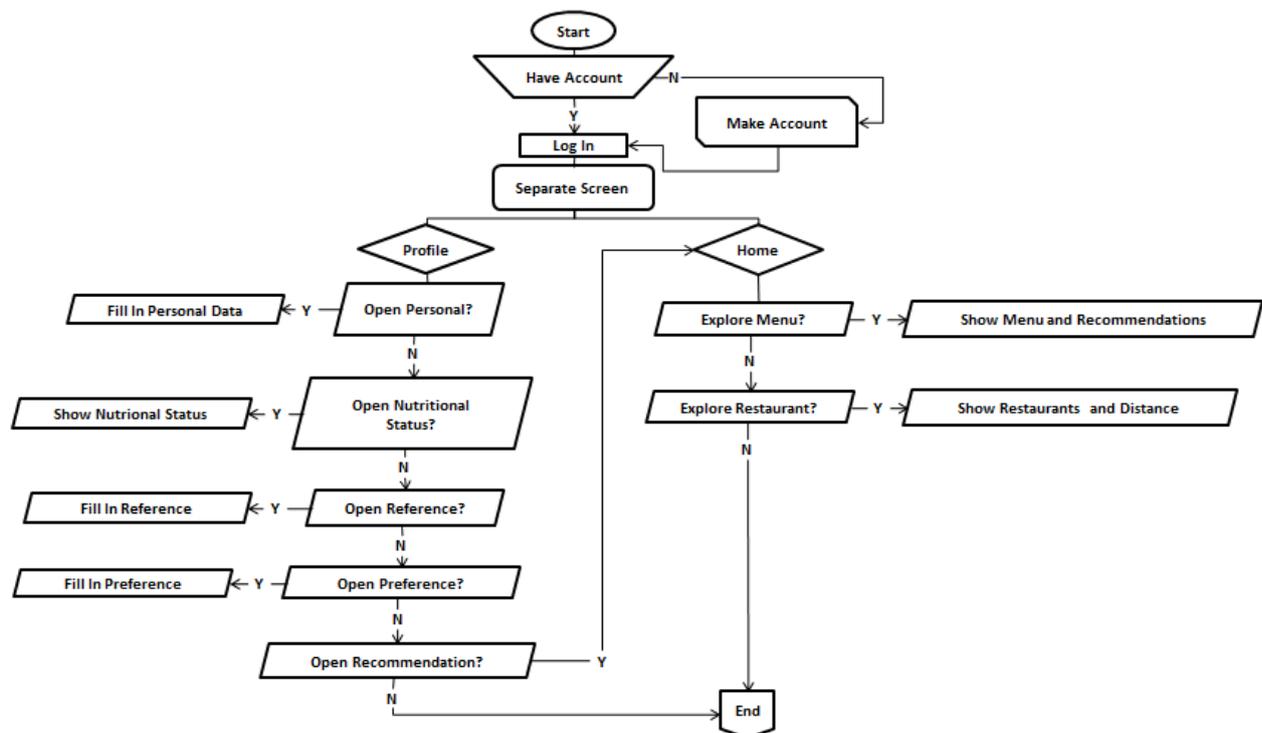


Fig. 1. Flowchart

According to figure 1. the program flow is obtained as:

- The application has a separate screen display or separate menu. Users (gastronomic tourists of Bandung City) can log in or if they do not have an account yet they will create it first by registering an active e-mail.
- The main menu consists of profile and home. The user (gastronomic tourists of Bandung City) taps on the profile then opens and fills in personal data to bring up their nutritional status.
- The user (gastronomic tourists of Bandung City) opens and fills in references then opens and fills in preferences.
- Completing all the required data (personal, references, preferences) then the recommendations can be seen on the home menu which consist of the menu recommendation feature and the restaurant recommendation feature.

C. Application Development

The development stage is the realization of the design which is carried out without code but using Appsheet as the platform. Storage of all required data, obtained and processed using Microsoft Excel as a

database and providing application logic. Researcher do the development with the help of a developer (someone who helps and makes software). The development process is carried out with an emphasis on functional goals that the final appearance and function built are:

1) *Profile Interface*

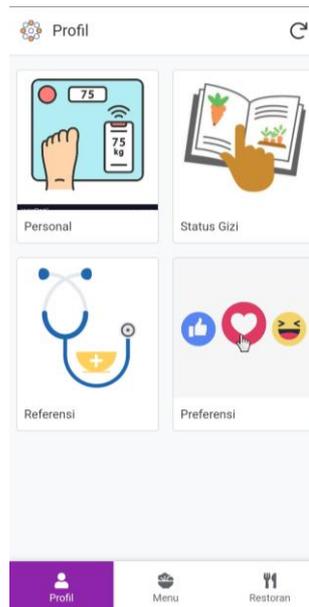


Fig. 2. Profile Interface

The profile interface is used to build users's (gastronomic tourists of Bandung City) personalization. The needs and desires are defined on the profile interface.

2) *Menu Interface*

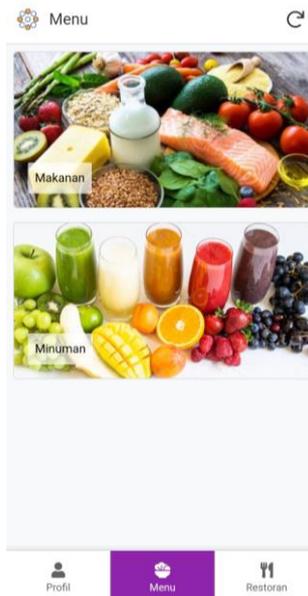


Fig. 3. Menu Interface

The menu interface is used to guide users (gastronomic tourists of Bandung City) choosing a menu by providing gastronomic information for available menus. The menu interface consists of two optional features: Food and Beverage.

3) Restaurant Interface

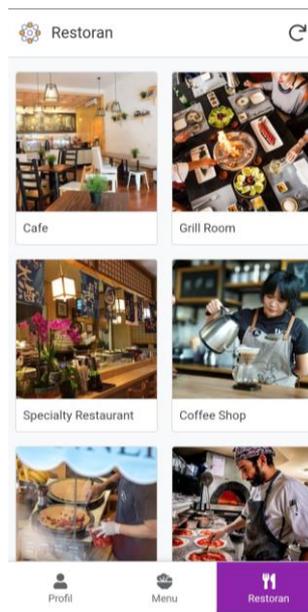


Fig. 4. Restaurant Interface

The restaurant interface in the application is used to guide users (gastronomic tourists of Bandung City) to choose a restaurant in Bandung City by providing gastronomic information regarding the existence of restaurants.

D. Application Implementation

The implementation was carried out by trial use on 37 users (gastronomic tourists of Bandung City) as respondents and end users, regarding the feasibility of gastronomic tourism guide application based on the needs and desires of tourists in Bandung City. The test is using a questionnaire.

The overall development test is assessed from the percentage values of four aspects:

1) Functionality Aspect

Respondents' assessment of the functionality and usability of the application is presented in table 1 below.

Table 1. Functionality Test

No	Question	F	Total Score	Ideal Score	%
1	Was the whole information presented useful?	37	173	185	93,5
2	Were the recommendations given overall useful?	37	169	185	91,3
3	Are the contents and information of the profile features appropriate?	37	164	185	88,6
4	Are the contents and information of the menu features appropriate?	37	164	185	88,6
5	How would you rate the menu recommendations?	37	168	185	90,8
6	Are the contents and information of restaurant features appropriate?	37	163	185	88,1
7	How would you rate the restaurant recommendations?	37	166	185	89,7
8	Is the application able to build personalization according to your needs and desires?	37	166	185	89,7
9	Is the recommendation displayed by the applications able to give more sense of security when you do culinary/ gastronomic tours?	37	163	185	88,1
Total			1496	1665	808,4

Result determination of the continuum area based on the calculation of the ideal score and the lowest score that describes the ideal area through the standard score in the previous table data is carried out in the following way.

Maximum index value = highest score (5) x number of questions (9) x number of respondents (37)
 = 1665

Minimum index value = lowest score (1) x number of questions (9) x number of respondents (37)
 = 333

Variable level = maximum index value (1665) – minimum index value (333)
 = 1332

Variable distance = variable level (1332) : number of class intervals (4)
 = 333

Score percentage = [score total (1496) : maximum index value (1665)] x 100%
 = 89,8%

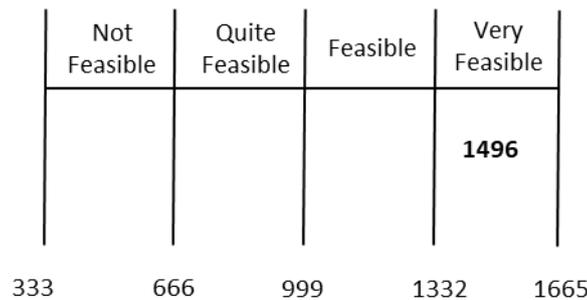


Fig. 5.Functionality Feasibility

The continuum line above describes the responses and assessments of respondents to the feasibility of the functionality aspect of gastronomic tourism guide application based on the needs and desires of tourists in Bandung City. The total value obtained is 1496 from the ideal value of 1665, proving that the feasibility of the functionality aspects is very feasible.

2) *Performance Aspect*

Respondents' assessment of the performance of the application is presented in table 2 below.

Table 2. Performance Test

No	Question	F	Total Score	Ideal Score	%
1	Is the application comfortable to use?	37	165	185	89,1
2	Is the application easy to use?	37	169	185	91,3
Total			334	370	180.4

Result determination of the continuum area based on the calculation of the ideal score and the lowest score that describes the ideal area through the standard score in the previous table data is carried out in the following way.

Maximum index value = highest score (5) x number of questions (2) x number of respondents (37)
 = 370

Minimum index value = lowest score (1) x number of questions (2) x number of respondents (37)
 = 74

Variable level = maximum index value (370) – minimum index value (74)
 = 296

Variable distance = variable level (296) : number of class intervals (4)

$$= 74$$

Score percentage = [score total (334) : maximum index value (370)] x 100%

$$= 90\%$$

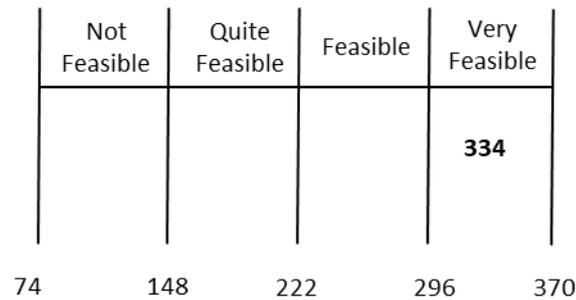


Fig. 6. Performance Feasibility

The continuum line above describes the responses and assessments of respondents to the feasibility of the performance aspect of gastronomic tourism guide application based on the needs and desires of tourists in Bandung City. The total value obtained is 334 from the ideal value of 370, proving that the feasibility of the performance aspects is very feasible.

3) *Design Aspect*

Respondents' assessment of the design of the application is presented in table 3 below.

Table 3. Design Test

No	Question	F	Total Score	Ideal Score	%
1	How would you rate the overall appearance of the application?	37	163	185	88,1
2	How would you rate the profile appearance?	37	160	185	86,4
3	How would you rate the menu appearance?	37	157	185	84,9
4	How would you rate the restaurant appearance?	37	160	185	86,4
Total			640	740	345,8

Result determination of the continuum area based on the calculation of the ideal score and the lowest score that describes the ideal area through the standard score in the previous table data is carried out in the following way.

Maximum index value = highest score (5) x number of questions (4) x number of respondents (37)

$$= 740$$

Minimum index value = lowest score (1) x number of questions (4) x number of respondents (37)

$$= 148$$

Variable level = maximum index value (740) – minimum index value (148)

$$= 592$$

Variable distance = variable level (592) : number of class intervals (4)

$$= 148$$

Score percentage = [score total (640) : maximum index value (740)] x 100%

$$= 86,4\%$$

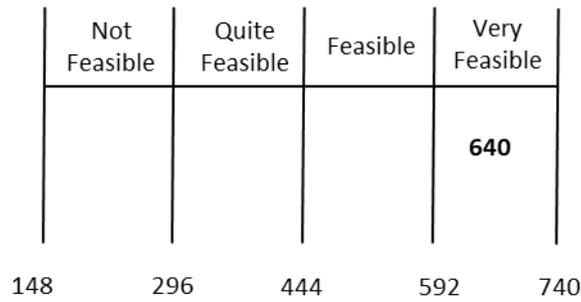


Fig. 7.Design Feasibility

The continuum line above describes the responses and assessments of respondents to the feasibility of the design aspect of gastronomic tourism guide application based on the needs and desires of tourists in Bandung City. The total value obtained is 640 from the ideal value of 740, proving that the feasibility of the design aspect is very feasible.

4) *Potential Aspect*

Respondents' assessment of the potential of the application is presented in table 4 below.

Table 4. Potential Test

No	Question	F	Total Score	Ideal Score	%
1	How would you rate the overall appearance of the application?	37	165	185	89,1
Total			640	740	165

Result determination of the continuum area based on the calculation of the ideal score and the lowest score that describes the ideal area through the standard score in the previous table data is carried out in the following way.

- Maximum index value = highest score (5) x number of questions (1) x number of respondents (37)
= 185
- Minimum index value = lowest score (1) x number of questions (1) x number of respondents (37)
= 37
- Variable level = maximum index value (185) – minimum index value (37)
= 148
- Variable distance = variable level (148) : number of class intervals (4)
= 37
- Score percentage = [score total (165) : maximum index value (185)] x 100%
= 89,1%

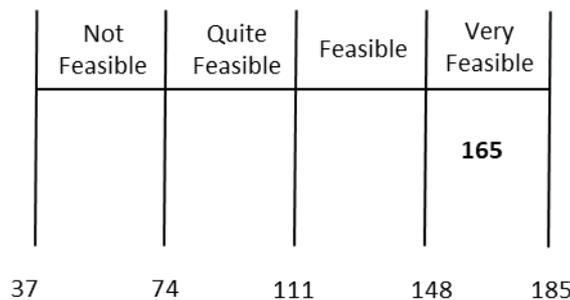


Fig. 8.Potential Feasibility

The continuum line above describes the responses and assessments of respondents to the feasibility of the potential aspect of gastronomic tourism guide application based on the needs and desires of tourists in Bandung City. The total value obtained is 165 from the ideal value of 185, proving that the feasibility of the potential aspect is very feasible.

The percentage of feasibility of the four aspects above shows that the overall application development and implementation has an average percentage of 89% of feasibility.

E. Field Evaluation and Findings

The application in this study seeks to harmonize the needs and desires of gastronomic tourists in Bandung City and help determine the appropriate tourism destinations. Field findings indicate that the quality of the recommendations and guidelines provided has a large dependence on the completeness of the data entered by the user. The risk that may arise is the possibility that the information and recommendation presented are less accurate because the data provided does not match the system requirements.

5. Conclusion

Application development is based on the needs and desires of gastronomic tourists in Bandung City. The development goal is to help simplify the travel decision process and provide practical and advanced (technology based) guidance (recommendations). The application has a separate screen or separate menu consisting profile, menu and restaurant. The application is feasible which can be seen from the percentage test of four aspects: functionality (89,8%), performance aspects (90%), design aspect (86,4%) and potential aspects (89,1%), that indicating gastronomic tourism guide application based on the needs and desires of tourists in Bandung City obtained a very decent category (very feasible).

Application development is still far from perfect and requires improvement and refinement in the future. The suggestions for making the application even better are:

- Development can try to use different platforms other than Appsheet or use coding.
- Collaborating with restaurants in Bandung City to include information on the nutritional content of each menu so that the data can be more accurate while helping to reach more specific target consumers or markets.
- The focus of gastronomic tourism locations can be developed outside Bandung City.
- Collaborate with nutritionists to provide deeper and more reliable health recommendations.

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