APPLICATION DESIGN SEEKING SHORTEST PATH USING DIJKSTRA ALGORITHM FOR ANDROID PLATFORM (June 2011)

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Abstract

The extent of a shopping center becomes a problem for consumers, with consumer ease the development of the shortest path to reach the stores that want to target. Dijkstra's algorithm is used for path search problem solving shortest path, in the retrieval of data on electronic maps using wifi technology and then connec ted to aserver. Development and Information Technology took the first berkembangnyabentuklarge map into a digital map that can be seen Smartphone. This mobile application helps consumers reach the shops are looking for without wasting much time and energy, and this application running on android platform.

Keywords
Shopping
Center, Near Line Search, Algorithm Dijkstra, Android

Index Terms—About four key words or phrases in alphabetical order, separated by commas. For a list of suggested keywords, send a blank e-mail to

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INTRODUCTION

Background The development of Indonesia's population who do a lot of urbanization from rural to urban areas increased from year to year [1]. Increased urbanization cannot be separated with an increasingly modern urban development. Jakarta is one of the cities that many villagers intended to urbanization to the city. The rapid development in big cities make the promotion of information technology into a building and know the contents of buildings, especially in the construction of a mall, they need to plan a store or location where they will go.

The breadth of the size of a mall sometimes make the visitor coming puzzled to find a store that you visit especially for new entrants visited a mall. Mall which already provides a pointing device or a small map of the mall but still visitor difficult to find because of the extensive size of the mall stores that make the map too large and waste a lot of time in the search.

Smartphone developments [2] is a mobile technology that rapidly its development in recent years, consciously or not people are now dependent on Smartphone's, and nearly every community has Smartphone. Smartphone is supporting the community in the city lifestyle, the lifestyle of this modern city want information quickly and easily.

Smartphone is a great tool in helping to facilitate the activities performed by users, almost every society now have a Smartphone and always carry a Smartphone wherever she goes. The development of smart phones is also developing applications for Smartphone's; Smartphone application is widely used to obtain information needed users. The application was developed to search for the nearest lane in a mall visitor needed to find a store that you visit as well as navigation in a mall run on smart phones.

Scope

The scope of our language is the design of manufacturing systems shortest path search on a shop in the mall using the Dijkstra algorithm and provides the requested information according to the user. This application is designed to use the Android mobile platform.

Discuss the mapping of the store at the mall

Search the shortest path from one place, where the object stands to the destination using the algorithm Dijkstra.

Using Wi-Fi technology in take data, in this application wi-fi internet access is used to retrieve the database from a server.

These applications are run on android mobile platform that uses kernel Linux and GNU.

Stakeholders in which the application is useful for anyone, and anyone using this application

.Methodology

Analysis Method

The analysis method is used to find information on how the system is running now with a tool called KIOSK, or by answer to the information. The concept of solving the problem of finding the shortest path algorithm using Dijkstra also designing mobile applications on Smartphone's that use the Android platform. The analysis performed above using the information search through the books or articles. Interview technique is also used to search data in order to solve this problem and useful applications.

Design methods

In this paper the design method is done using the Unified Modeling Language (UML). All activities were described in an application in UML models, which each model will be explained the activities of application activity

Stages of Research

Conduct field studies in the mall, with the observation to one of the malls in Jakarta to see the facilities and conditions in the mall

Conducting interviews in the community or students on campus

Conducted a study to determine Android programming techniques and apply Android applications.

Conduct literature study to get a theoretical basis, data or information regarding the application to be made.

Applying the concept shortest path using wi-fi as the connection in the Android application

Designing database applications with php mysql

Designing a connection from the mobile to the server by web service

Designing interfaces that applications can be accessed via mobile (Android).

Translating the design and application programming interfaces Android.

Theoretical Framework

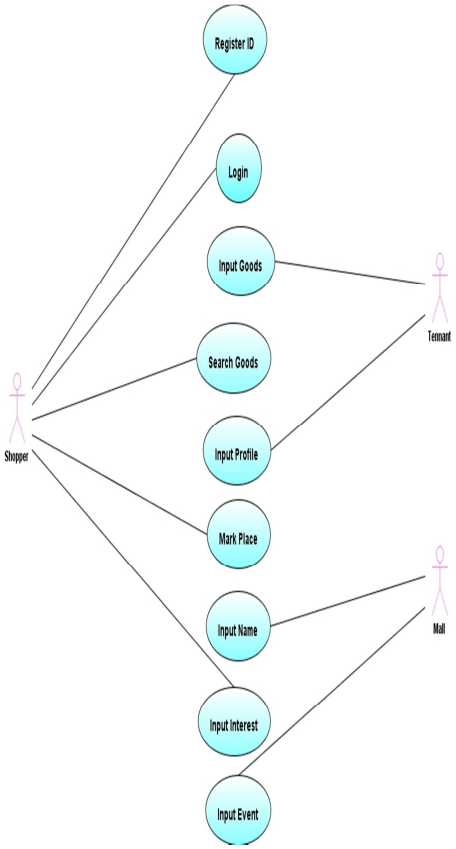
UML (Unified Modeling Language)

UML is a graphical notation that helps describe the system software; particularly software systems built using object orientation [3]. In designing software, create a UML would be useful because it can facilitate discussion among developers about the design and how the system works. Here UML is used to design an application where each model from the UML will explain each activity in this application.

Scenario Model

In this scenario the model used Use Case diagrams [4] define the use case as a scenario that describes how software used in certain situations. The following use cases are created based

on the application Shopper Tracking.



Picture 1 Use Case

Analysis and Design Applications

Analysis and design of this application is divided into two parts, namely the purpose of analysis and process analysis applications

Dijkstra's algorithm is named by the inventor of a computer expert named Edsger Dijkstra [5]. The algorithm used for solving the shortest path problem of a directed graph with weights is not worth the negative side and the example image below graph.

Objectives and Benefits

The purpose of making this tracker shopping application that runs on smart phones which is to assist the visitors in a mall or a store looking for items that are being sought will be faster when compared to see KIOSK mall map, ask the information, security officers, or see the maps available manually in the mall. This application will show the location of stores or items being sought and the position of visitors in the form of a map of the mall, and then this application will choose the shortest path to reach the goal so that the user applications more quickly achieve its objectives. Also help users get the appropriate information items or user needs.

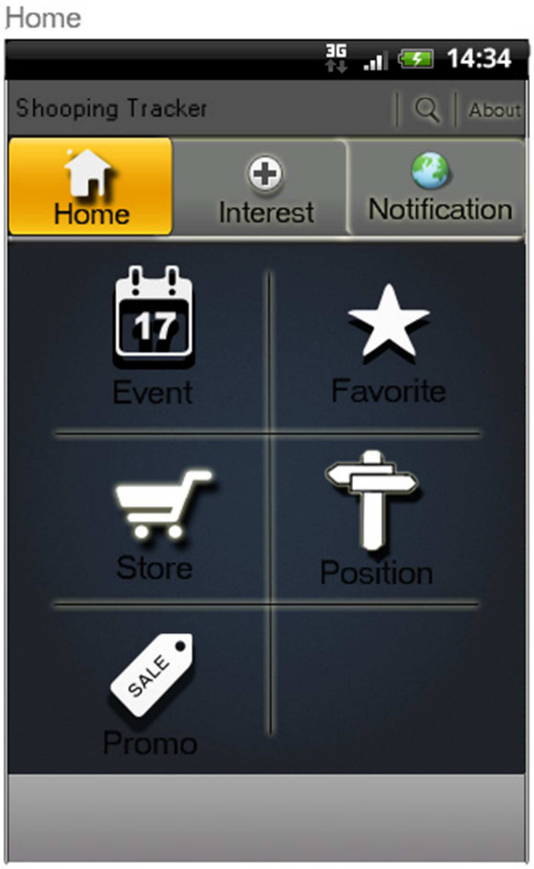
The benefits for mall visitors is the ease in positioning the desired goods or stores, the time required in the search faster when compared to asking the information, security, and look at the map manually.

Benefits to the mall is the mall gets data about the search for potential visitors as interest that is a trend, so the mall can customize the theme of the mall or the conduct of activities - activities that interest visitors in accordance with the trend.

Benefits to the store is a store gets data about the searches conducted by visitors, so the store can find the desired item visitors who have not been there in the store, and goods being sought. Analysis Application Process

Picture 2 Login Page

This is when the application first page on launch, here shown at the top of the logo and the name of the application, then provided a place to enter a username and password, the user is also given the option to remember the current account will be logged, so as not to require a log in repeatedly when will use the application again. On this page the user can also create an account by selecting the "create account" which will then be redirected to the registration page. Users who already have an account and login will be directly transferred to the home page.



Picture 3 Home Page

On the home page, at the top there is the application name, the search option to search for the goods desired by the user, in addition to any section about the search option to provide information about the application, developers, and parties - the parties involved in the development of a shopping application tracker. Underneath there are 3 options tab, the home, interest, and notification. Tab home that is headed to the home page of the application, the tab will interest to a page, the tab will go to a pager notification. Underneath there are five menu options are: an event to see the schedule of events - the event is in the mall, favorite places to see - the favorite places that have been rated by visitors to the mall, store to see a list of existing stores in the mall, the position will be redirected to a page, the promo to see information - information provided by the store promos around.

Conclusion

These applications are used as navigation in a mall to search for the shortest path to the store you want to visit the user so the user does not waste much time in finding a store or a long time. The application also provides cool info-users so that users know what info is there in the mall he visited.

Recommendation

Advice - advice given additional develop this application:

1. Servers are always maintained so that users get the data quickly and meet the needs of the user application

2. Conduct routine checks on operation navigation map, so if there can be known easily and handled with ease.

3. Additional features info for view what suits the user desires.

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