Geographic Information Retrieval Student Dormitory

Jiraporn Thomkaew , Sornsawan Chan – u- dom , Namchai Srisuksai

Abstract: This research aims to study the characteristics of geographic information systems of student dormitories at Rajamangala University of Technology Srivijaya. Nakhon Si Thammarat Campus. Design and development a geographic information retrieval system for student dormitories at Rajamangala University of Technology Srivijaya. Nakhon Si Thammarat Campus. And evaluate the user satisfaction assessment of the geographic information retrieval system. Defining the area around Rajamangala University of Technology Srivijaya 3 km. Location survey of student dormitories. Apply Google+ technology for latitude and longitude coordinates of dormitories. The database was created using MySQL and developed web applications with PHP language. It also applied the Google Map API technology for mapping of dormitories. The research found that the area around the university has 87 dormitories, 3types such as: female dormitories, male dormitories and shared dormitories. Each dormitory offers different services and facilities. Development of geographic information retrieval systems Student dormitories can design and development system within the scope of research. Students can retrieve the information of the dormitory from the name, price and location of the dormitory. The user satisfaction assessment of the geographic information retrieval system was high satisfactory.

Keywords: Geographic, Information Retrieval, GIS

I. INTRODUCTION

Rajamangala University of Technology Srivijaya Nakhon Si Thammarat Campus (Saiyai) is taught by 3faculties: Faculty of Agriculture, Faculty of Science and Technology and the Faculty of Management Technology. In one academic year, there are many new students who are going to study in the university. They come from a wide variety of areas far from the university. Some people come from different provinces or different districts. Students are required to rent a dormitory during their studies. Another important thing besides having to study in the university, renting a dorm is very important for students who come from other areas or far away from home and are a parent's concern as well as security issues while staying at the dorm. Therefore, dormitory business is happening at the university to meet the needs of students. From the present, most dormitories are usually located in areas not far away from the university, such as the Soi Yong Waterfall, The main train station, in front of Srinakarin Camp Thung Song District Prison Waterfront, Thapae School It is a new campus and unfamiliar with the area.

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It is not easy to find a dorm or a rental apartment. Most often drive or travel to find a hostel. Some may be advised by friends or siblings to use the dorm or may see signs to rent dormitory area. There are several types of accommodation available at the campus: female dormitories, male dormitories and shared dormitories, as well as flat dormitories. The price is different and there are different services. Dormitory operators are highly competitive the price of furniture, facilities and services, the environment around the dormitory. As a result, students cannot know the dormitory details until they have to travel to explore the dormitories themselves or introduce them. It is a problem for new students and parents. In modern times, technology plays a role in the daily lives of people of all ages, with access to Internet technology 24hours a day to search information. It can be made easier and technology has been developed for users to use free and can be applied to a variety of applications such as Google Map technology, Google API and Google+ technology is suitable for the application of various maps. Determining the location, location of the building, etc. Therefore, the researcher developed a geographic information retrieval system for student dormitories at Rajamangala University of Technology Srivijaya. The system will store the information and details. Each of the dormitories in the database. Students and parents can find a dorm from the developed system. In addition, the system can also display the coordinates, addresses of dormitories and routes to student dormitories. It is used to find dormitories in the vicinity of the university to help accommodate students and parents. The objective are 1) To study the characteristics of geographic information systems, dormitories at Rajamangala University of Technology Srivijaya. Nakhon Si Thammarat Campus. 2) To design and develop a geographic information retrieval system for dormitories at Rajamangala University of Technology Srivijaya. Nakhon Si Thammarat Campus. 3) To evaluate the user satisfaction assessment of the geographic information retrieval system.

II. LITERATURE REVIEW

Information Retrieval System

Information Retrieval System (IR) is a system that manages the processing of information in various types of documents, such as books, journals, articles, websites, and so on. Document retrieval, where the problem is currently a large number of documents. Searching for documents or data from an existing source cannot be done correctly and quickly.

The method of information retrieval is not the way of reading the entire document in order to retrieve the required document, but rather uses the characteristic of the document's content as a representative of the document, which can identify the relevant documents (questions) or items from the irrelevant documents. (Non-relevant) The retrieval of documents is difficult to identify the document or information that is required. Often, results or documents that are pulled out do not meet the needs of the user. Information retrieval Information refers to any action that results in the return of a document or information. The retrieval of information retrieved from the metadata by a search engine results in the retrieval of content related to the query or query used in the query. The documents or information herein referred to herein, publications It is also used for other media such as video, images, audio, multimedia, and everything else that is stored.

Geographic Information System

Geographic Information System: GIS is a process of spatial data processing. The information Geographic location, such as home address, relative to location in map, latitude, longitude, data, and map data in GIS, is an information system that is in the form of a data table. Spatial data is the spatial data format and relationship. It can be analyzed with GIS and interpret the time-related changes, such as the spread of pandemics. Relocation, destruction Change of space usage, etc. GIS has many benefits, especially environmental management. Urban planning Management utilities By calculating the area to use from the map. For example, measuring distances in road construction or plotting points for plumbing.[1]

GIS is the information system stored on the computer. The condition of the system is related to the proportion of distance and actual area on the map. The difference between GIS and MIS can be determined by the nature of the data. The data stored in the GIS is spatial data that is displayed in the form of graphics, maps, and data. Attribute Data or Database. The two types of data are linked together. It allows users to display both types of information simultaneously, such as the location of the black smoke detection point. White smoke can be identified by the name of the checkpoint. In contrast can be inquired for details. Checkpoints from the selected location, unlike MIS that displays images only, it will be missing links to the database associated with the image. For example, in CAD (Computer Aid Design), the image will be the only image, but the map in the GIS will be related to the position. The geographic area is the exact coordinates. The GIS data, both spatial and descriptive data, can refer to the physical location on the Earth using the Pixar system. The geographical (Geocode), which can be referenced both directly and indirectly. GIS data referring to the Earth's surface directly means data that has coordinates or actual positions on the Earth or in a map, such as a location, a building, a road, etc. GIS data is indirectly referenced to the Earth. Information of the house (including house number, Soi, district, province and zip code). We can know where this house is located on the earth because every home has a unique address] 2]

System Development Life Cycle: SDLC

The development of the information system consists of several stages of the operation to ensure that the operation is efficient and completed within the specified time frame. Project started until the end of the project, called System Development Life Cycle (SDLC). It is a sequence of steps to develop a system consisting of 7phases, consisting of Problem Definition, Analysis, Design, Development, Testing, Implementation Phase and Maintenance.

Google+

Google+ is another Google service, a communications website that can quickly send messages, share photos, videos to friends, acquaintances, or family members who own Gmail, allowing them to use their Gmail account for signing up for Google+. This service is called Google Hangout. [4] For this research, Google+ is used for latitude and longitude coordinates. Location of dormitory to take latitude and longitude coordinates. Log in to the database for query.

Google Map API

An Application Programming Interface is a channel that connects to a Web site. An API provider from another is an intermediary that allows the application to connect to another application or connect it to the operating system. One that has been developed on the site layout by inserting Google Maps API on the page that needs to look. Google Maps API works on the display. Each analysis is quite straightforward to map the Google Maps API has been widely used by both developers and users. Because Google Maps API is geographically well-documented The Google Maps API is also OPEN. SOURCE is a widely used HTML and JavaScript language in the developer community.

The API is a group of functions, steps, or classes (Class) to the operating system (OS) or service provider. The API is compatible with all supported programming languages. It is made in the form of a syntax or element that can be used comfortably. [3]

III. METHODOLOGY

Scope of study

This research a study of dormitory users by surveying the dormitories of Rajamangala University of Technology Srivijaya, Nakhon Si Thammarat campus (Sai Yai). To collect the dormitory data and then design a geographic information retrieval system. The geographic coordinates are divided into two parts: administrator part and user part.

Administrator can insert details of the dormitory include the image of the dormitory, the dormitory name, the dormitory address, the dormitory fare, the dormitory type and so on. The administrator will keep this information in Rajamangala University of Technology Srivijaya. The campus is located in a 3-kilometer radius of Rajamangala University of Technology Srivijaya. Nakhonsithammarat campus is the center. Administrators can access dormitory information by adding, removing, and modifying details of the dorm.

Users are divided into two categories: general users and students and the owner of the dormitory. General users and students, you can search for dormitories for details such as hostels name, hostels address, hostels fee, dormitories type, hostels picture, dormitories and dormitories. View coordinates Dormitory location

Research Design

Study the route in a 3 km radius, explore the actual area to interview and collect dormitory information and determine the latitude and longitude coordinates of the dormitory. The dormitory route is divided into 3 routes, namely, 34 dormitories (29.58%) in Soi Waterfall., 27 dormitories (23.49%) of which are Thungsong - Nakornsri Road, opposite to the University, Thungsong - Nakhon Si Thammarat with the university has 26 dormitories, 22.62% of the total of 87 hostels.

Then all the dormitory information was analyzed. Data can be divided as follows: dormitory information coordinates the latitude and longitude of the dormitory. Room Type Dorm Room Information Dormitory Information The data from the study and analysis are all designed to create a database and create tables in the database to relate to the data.

Population and Sample Research

The population and the sample of this research are the dormitory businessmen at Rajamangala University of Technology Srivijaya. Nakhon Si Thammarat Campus. It has a radius of 3 kilometers and has 87 colleges.

Research Analysis and Design

E-R Diagram The E-R Diagram is a diagram showing the relationship of data in a data file of system, which represents the field name. Each file is used to store system data and represents the data relationship. Between files, the diagram shows the relationship of information in the geographic information retrieval system. Dormitory at Rajamangala University of Technology Srivijaya. Nakhon Si Thammarat Campus as shown in figure 1.
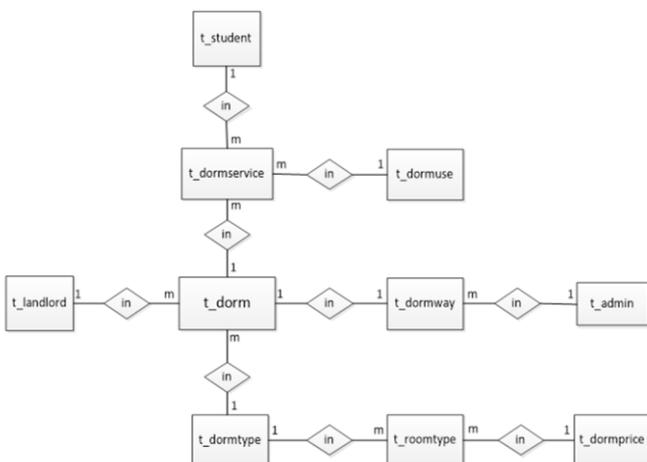
Fig.1 E-R Diagram of the geographic information retrieval student dormitory.

Fig. 1. Show E-R Diagram of the research consists of all 10Entity data, each of which is related to each other within the scope of the research system and each user's system privileges. The E-R Diagram is designed to analyze the flow of data. Context Diagram, Data Flow Diagram, and Database Design with MySQL. Develop web applications with PHP.

IV. RESULTS

The research found that the student dormitories around the Rajamangala University of Technology Srivijaya. There are 87dormitories in Nakhon Si Thammarat, divided into 3 routes around the campus. There are female dormitories, male dormitories. There are both fan dormitories, fan and air-conditioned. Each with different dormitories. Prices start from 2000baht / month to 4500baht / month. Different prices depend on the factors of the facilities and services that the dormitory has resulted from the development of geographic information retrieval system. Rajamangala University of Technology Srivijaya .The system is divided into two parts: administrator can log in function and insert, edit update information of dormitory. And user part who owners the dormitory can subscribe to the system and can add information about his / her dormitory and the part of the user who is a student can find information about the dormitory. Both have different field boundaries, so the program screen varies when a user searches for all dormitory information It will be shown in Fig. 2.
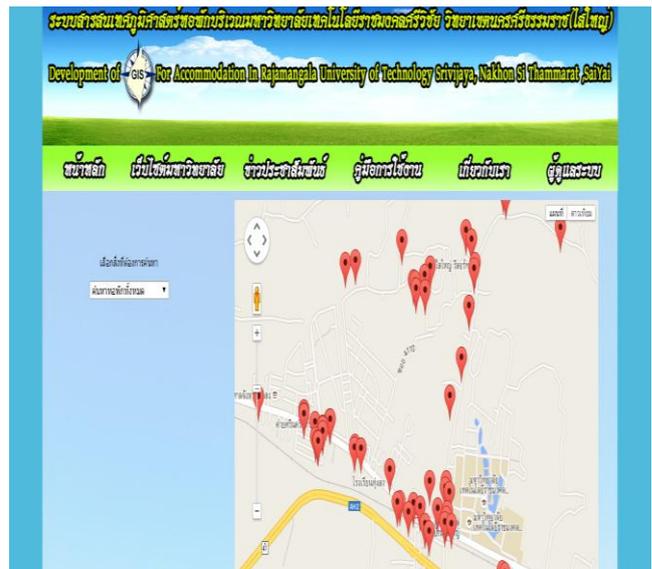

Fig.2 Shows result of geographic information retrieval student dormitory

Fig. 2. When a user searches for all dormitory information The system will show the coordinates of the dorm. Dormitory information can be found on the route. And the dormitory price that users want. If the user wants to click on the details of the dorm, click on the red pin. The system will display the details of the users clicked Fig. 3.