

Design Mapping Categories on Geographic Information Systems

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ABSTRACT

Categories are part of the classification system (class, rank type, and so on). In an integrated mapping system, there is a lot of data and types of mapping which will make it difficult to search for data by selecting one by one. To facilitate the search, a search system is created that also supports categorization. The mapping's category system makes it easier to search for maps according to their respective categories. Therefore, design and construction of mapping category on the geographical information system researching on how to implement categories in the geographical information system, which can then be displayed on the category table, so that the data of category names can be displayed in the form of a table in the category search. In the search category, users can not only fill one category in the search field, but users can fill more than one category. However, the name entered in the search field must match the category name, if it does not match then the category name will not be displayed in the category names table. This method hopefully can help users to find similar or relatable mapping to the one they need.

Keyword: *Categories; Mapping; GIS.*

INTRODUCTION

Geographic Information System (GIS) becomes an application that facilitates the search for information related to a map or location of a place. In mapping, categories can make it easier to search for mappings according to their respective categories. If you search by title then the possibility that appears is the mappings that have the same title but do not display similar mappings with different titles. With categories, you can search for mappings with similar themes.

Therefore, design a mapping category on this geographic information system, making how to input categories in the mapping, which can then be displayed on the addition of category names. So that the user can easily do a mapping search according to the category name (Mushtofa et al, 2021).

Software builders in the development of this geographic information system engine use MapBox by using MySQL as a Database Management System. Mapbox itself is an open source mapping platform that works and releases as much code as possible. Most Mapbox data uses help and invests in a wide variety of data sources such as OpenStreetMap, USGS, Landsat, and OpenAddresses. While MySQL is a popular database management system (DBMS) that has a function as a relational database management system (RDBMS). Applications developed based on WEB but not yet developed into mobile form. What is handled in this study is how to set categories in a map, but this study does not discuss the process of mapping and recording data (Sujono & Prayitno, 2021).

The integrated mapping system will accommodate many mappings such as Design categorization mapping on this geographic information system referring to a previous research conducted by (Leman 2018) titled "Geographic Information System (GIS) For Android-Based Accident Management". This research is a study that uses qualitatively discrete methods. This research aims to create a location mapping (LBS) based service android crash site (Pratiwi et al, 2021). In the study it is known that, some applications with some open source operations are used to be updated with many purposes. As updated from the android-based accident management application that is useful for services to the public to facilitate the public in informing and providing information to the police, services or parties who need

that information when viewing or also having an accident. (Lengkong 2015) Titled "Designing Route Pointers On Private Vehicles Using Andriod-Based Mobile GIS Application Integrated On Google Maps". In this study the authors used only white A4 paper to write, and laptops used to design and create such applications. This research is aimed at meeting the needs of the community to see the route directions according to the needs of users (users). This mapping data has similarities even though it is not visible from the title, because it is important to make categorization.

METHOD

Research Design

This study uses quantitatively descriptive research to determine the location of the map distribution according to their respective categories. This study used GIS (Geographic Information System). From the design of this study can be known the distribution of maps according to their respective categories.

Data Collection Techniques and Research Instruments

- Data Collection Techniques

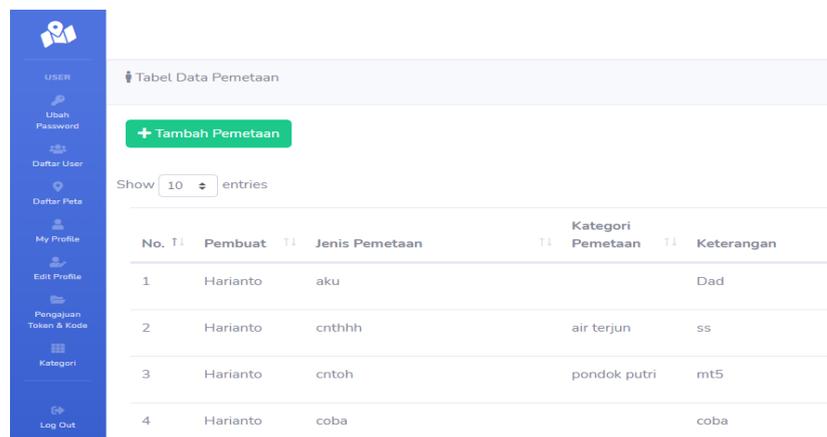
Data collection techniques in this study in the form of Literacy and Documentation techniques conducted by accessing, managing, analyzing, and evaluating predecessor research information. sources of information from print and digital media.

- Research Instruments

Research instruments designed mapping categories on GIS using devices among others a) Software includes the operating system used is Microsoft Windows 8 Professional, FTP software used is Filezilla, the code editor used is Sublime, database management used is MySql. this software instrument refers to the statement of (Anggraini 2020), a mobile-based design application, built with codeigniter framework and Framework 7, MySql as a database and Mapbox Api as a digital map service; b) Hardware includes laptops and flash drives.

RESULT AND DISCUSSION

Design category mapping on this geographic information system is able to display data of a place / region that corresponds to the category chosen by the user. The category mapping application is described in the image along with the following details:



| No. | Pembuat | Jenis Pemetaan | Kategori Pemetaan | Keterangan |
|-----|----------|----------------|-------------------|------------|
| 1 | Harianto | aku | | Dad |
| 2 | Harianto | cnthhh | air terjun | ss |
| 3 | Harianto | cntoh | pondok putri | mt5 |
| 4 | Harianto | coba | | coba |

Figure 1. Mapping Data Table page

The table page in the mapping displays a list of mapping data where the feature of adding mappings can be done by pressing the green button with the caption '+ add mapping' (Fig 1). The Add Mappings page serves to add new mapping data that includes the mapping name, category name, and caption (Fig 2). The Categories page is functioned to add categories if the category you're looking for isn't already in the category name datalist (Fig 3). The name of the Category you have added will appear in the datalist (Fig 4).

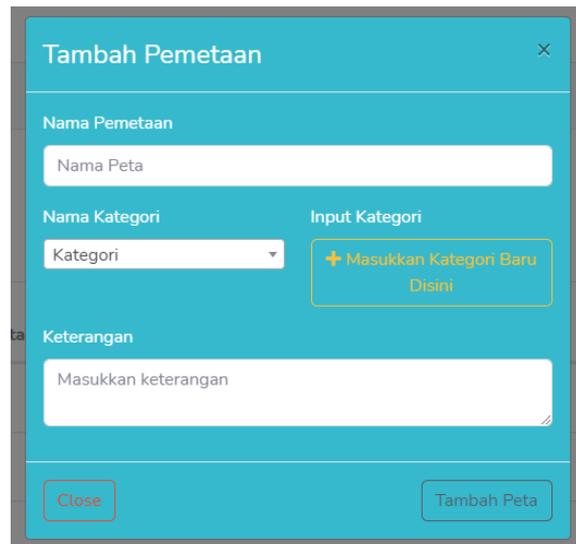


Figure 2. Add Mapping page

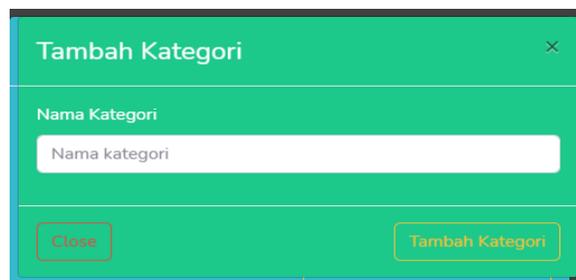


Figure 3. Add Category page



Figure 4. Datalist View

The page for category search, which will display a table of data of the names of places / locations searched by category can be seen in Figure 5. The view after filling in the category name to be searched, below the search field will appear a list of data tables of place names / locations that correspond to the filled categories (Fig 6). In Figure 7 is displayed printscreen that can be used by users to search for categories, not only 1 category that can be searched but can search for 2, 3 or more categories at once. Figure 8 displays the View on the data table list of place names/locations according to category.

Pencarian Kategori Pemetaan

Total Records - 6

| Kategori | Nama Peta | Keterangan |
|----------|--|--|
| null | Sebaras Penduduk Jombang Berdasarkan Pekerjaan | Sebaras Penduduk Jombang Berdasarkan Pekerjaan |
| null | contoh | pppp |
| null | contoh | ppp |
| null | Pemetaan lokasi beberapa titik | 1 |
| null | SD | hhh |
| null | SD | hhh |
| null | tyy | vvg |

Figure 5. Category Name Search Page

Pencarian Kategori Pemetaan

Total Records - 3

| Kategori | Nama Peta | Keterangan |
|----------|--------------------|--------------|
| Masjid | Masjid Nurul Falah | Kab. Jombang |
| Masjid | Masjid Uli Albab | Kab. Jombang |
| Masjid | Masjid Sabillillah | Kab. Jombang |

Figure 6. Display on The Data Table List Of Place/Location Names By Category

Pencarian Kategori Pemetaan

Total Records - 6

| Kategori | Nama Peta | Keterangan |
|-------------|-------------------------|--------------|
| Masjid | Masjid Nurul Falah | Kab. Jombang |
| Masjid | Masjid Uli Albab | Kab. Jombang |
| Masjid | Masjid Sabillillah | Kab. Jombang |
| Rumah Sakit | Rumah Sakit Isam | Kab. Jombang |
| Rumah Sakit | Rumah Sakit Airlangga | Kab. Jombang |
| Rumah Sakit | Rumah Sakit Umum Daerah | Kab. Jombang |

Figure 7. Display on The Data Table List Of Place/Location Names By Category

Pencarian Kategori Pemetaan

Total Records - 10

| Kategori | Nama Peta | Keterangan |
|-------------|------------------------------------|-----------------------|
| Masjid | Masjid Nurul Falah | Kab. Jombang |
| Masjid | Masjid Uli Albab | Kab. Jombang |
| Masjid | Masjid Sabillillah | Kab. Jombang |
| Rumah Sakit | Rumah Sakit Isam | Kab. Jombang |
| Rumah Sakit | Rumah Sakit Airlangga | Kab. Jombang |
| Rumah Sakit | Rumah Sakit Umum Daerah | Kab. Jombang |
| Universitas | Universitas Darul Ulum | Kab. Jombang |
| Universitas | Universitas KH. A. Wahab Hasbullah | Tambak Beras, Jombang |
| Universitas | STADIP PGRI | Kab. Jombang |
| Universitas | STIE PGRI Dewantara | Kab. Jombang |

Figure 8. Display on The Data Table List Of Place/Location Names By Category

CONCLUSION

In the design of mapping categories in this geographic information system make how to input categories in the mapping, then the categories that have been inputted can be displayed in the datalist column of the category name in the command add mapping. With this, the user can easily search for mappings according to categories, so that users can get accurate mapping data information.

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