RESEARCH ARTICLE

DATABASE DESIGN FOR COSPLAY MAKING SERVICE OUTLET SELECTION RECOMMENDATION SYSTEMS

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Manuscript Info	Abstract
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	This research is a type of action research. Aims to design a database for a costume ordering service outlet recommendation system. The application is built using the flutter framework as the user interface, the PHP language as a data processor that is sent from the application and MySQL as the database.A recommendation system is a system that is able to identify and provide high potential content selected by users based on filtering information that takes preferences from user behavior and history.The final result of the database design shows that the database design consists of 5 tables, namely the User Table, the Orderuser Table, the Outlet Table, the Rating Table, and the Review Table, as well as the Web-based Cosplay Making Service Outlet Selection Recommendation System.

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Introduction:-

A. Overview
COSPLAY is a combination of the word "costume" which means costume and "play" means "to play". Costumeplay itself is an activity using equipment similar to those worn by characters in movies, cartoons, comics and video games complete with make-up and accessories. Not only do users mimic those worn by these figures but users also mimic movements or scenes similar to the movie or cartoon characters they play. In Indonesia costumeplay can be found at Japanese events or super-hero events such as the Japanese Title at the University of Indonesia, Jak Japan Matsuri, Indonesia Comic Con, Anime Festival Asia Indonesia etc. Although many people have been pursuing costumeplay, they often find problems when ordering the desired volume play equipment, the quality of the post volume play equipment does not match the price, as a result it makes it difficult for people to choose a shop that can produce quality volume play equipment according to the price, to help people choose shop ordering accessories for the postum. play, it is necessary to apply a recommendation application where to order equipment for volume play.

Currently there are many recommendation applications for a place, be it a place to eat, a hotel, or a daily product store.

In Database Design for Costume Ordering Service Recommendation System, including designing tables, attributes, character length measurements for each attribute, and determining the primary key.

To support the Ordering Service Recommendation System, proper and functioning Database design is required. In each file, each Attribute must depend entirely on the primary key of the file.

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B.   Problem Identification
  How to design a database for an outlet selection recommendation system for custom ordering services?

C.   Research Goal
  The purpose of this study is to design a database for a recommendation system for the selection of outlets for Costum Play ordering services.

Theoritical References
Recommendation System
Recommendation Systems are systems designed with the aim of helping users get to what they might like, by providing recommendations to other users when other users are faced with a large amount of information. The recommendations given are hoped to be able to help users in the decision-making process, such as what items to buy, what books to read, or what films to watch and others.

How to search for items recommended to users can be done based on similarities, either in the form of the similarity of an item to another item based on content or the similarity of a user's tastes to other users based on the rating given to the item.

In the mid-1990s there was a lot of research on recommendation systems to find new approaches in overcoming problems arising from the flood of information on the internet (Adomavicisu and Tuzhilin, 2005). The recommendation system approach that is most commonly used in recommendation systems is the content-based filtering and collaborative filtering approaches. Both of these approaches have their respective advantages and disadvantages in recommending items to users, such as in content-based approach which recommends items only based on user history, so that the recommendation results tend to be monotonous, while collbarative filtering has problems when there is a new item. But both of them have the advantage in certain cases concerning the problem of time efficiency, accuracy of rating predictions, etc..

Based on the recommendation method that is often used, the recommendation system is divided into several classifications, namely: content-based recommendation, collaborative-based recommendation and hybrid-based recommendation and some researchers add the knowledge based recommendation method..

Ordering
Ordering is an activity carried out by consumers before buying. To achieve customer satisfaction, the company or place of business must have a good ordering system. According to the Big Indonesian Dictionary, what is meant by ordering is "the process, action, how to order (place, goods, etc.) to other people".

Booking in a general sense is a place reservation agreement between 2 (two) or more parties, the reservation agreement can be in the form of an agreement for the reservation of a room, room, seat, etc., at a certain time and accompanied by its service products. The service product in question is the service offered in the reservation agreement, such as in an airline company or shipping company is the movement of people or objects from one point (city) to another (city)..

Software Requirement Analysis Model
The process of gathering needs is intensified and focused, in particular on software, in order to understand the nature of the program being built, the software engineer (analyst) must understand the information domain, behavior, performance and interface required..

Design
Software design is actually a multi-step process that focuses on four distinct attributes of a program; data structures, software architectures, interface representations, and procedural details (algorithms). D. Design code generation should be translated into machine readable form. In research using the PHP programming language to translate commands to be executed into machine language.

Coding
To be understood by a machine, in this case a computer, the design must be transformed into a form that can be understood by the machine, namely into a programming language through the coding process. This stage is the

implementation of the design stage which will be done technically by the programmer. At this stage, the researcher builds an application based on the "blueprint" design that has been made. This application development is carried out from the beginning until the application is ready to run.

Testing
The testing process focuses on the internal logic of the software, ensuring that all statements have been tested and on a functional external, that is, directing testing to find errors and ensuring that the constrained input will give actual results that match the required results..

Maintanance
Software maintenance applies each of the previous program phases and does not create new ones.

PHP
PHP stands for PHP Hypertext Preprocessor. PHP is used as a server-side scripting language in web development that is embedded in HTML documents. The use of PHP allows the web to be dynamic so that website maintenance is easier and more efficient. PHP is written in C language.

PHP has many advantages that are not shared by similar scripting languages. PHP is focused on creating server-side scripts, which can do anything CGI does, such as gathering data from forms, generating dynamic web page content, and the ability to send and receive cookies, even more so than CGI capabilities. PHP is not limited to output HTML (HyperText Markup Language). PHP also has the ability to process images, PDF files, and flash movies. PHP can also generate text like XHTML and other XML files.

One of the features that PHP can rely on is its support for many databases, one of which is MySQL.

MySQL and Database
On its official website at www.mysql.com, MySQL was originally founded and developed in Sweden. Development was undertaken by David Axmark, Allan Larsson, and Michael "Monty" Widenius, who have worked together since the 1980s.

MySQL (My Structured Query Language) is a multiuser database that uses the Structured Query Language (SQL). MySQL in client-server operations involves the MySQL server daemon on the server side and various programs and libraries that run on the client side. MySQL is also capable of handling large amounts of data. The company that developed MySQL, namely TcX, claims to be able to store data for more than 40 databases, 10 000 tables, and about 7 million rows.

SQL is the standard language used to access database servers. This language was originally developed by IBM, but has been adopted and used as an industry standard (Sunarfrihantono, 2002: 65).

MySQL can be run in two ways, namely through DOS and the PhpMyAdmin application. If using DOS, we must know and memorize the query syntax used in the MySQL programming. PhpMyAdmin is a dump program that is made like the web and runs under a database server and by using PhpMyAdmin we don't need to know the query syntax used (Nugroho, 2004: 29-31).

Database or database has the meaning of a file that coordinates data tables that are interconnected and have a common interest to form new information so that it will facilitate processing. The database has several terms, both in structure and command. Some of the terms that often appear are as follows:
1. Table :data sets in records consolidated for a particular interest.
2. Record: groups of fields grouped together in one row.
3. Field: the type or data type of a data item and its value limits.

In SQL, there are 3 sub languages, namely Data Definition Language (DDL), Data Manipulation Language (DML), and Data Control Language (DCL). DDL contains commands that are used to build the contents of the database, tasked with creating SQL objects and storing their definitions in tables. DML is used to display, modify, add, and delete rows in a table. DCL is used to help control the security of each database or part of the contents of the database by making certain access rights for each user (Ridwan, 2005: 39 - 42).

Databases are important in data processing using computers, because they are the main components in information systems and determine the quality of information, namely fast, accurate, and relevant. Data in the database also needs to be compiled to overcome problems in data preparation. According to Supriyanto (2005: 194-195), the benefits, among others:
1. Resolve data duplication (redundant).
2. Avoid data inconsistencies.
3. Overcoming difficulties in accessing data.
4. Construct a standard format of data.
5. Ease in use by many users (multiple user).
6. Protect and secure data, and
7. Develop data integrity and independence.

Unified Modelling Language (UML)
Unified Modeling Language (UML) is a family of graphical notations that help research and design software, especially systems built using object-oriented programming. Unified Modeling Language (UML) is a tool, a modeling language that can be used for object-oriented design. UML can be used for specification, visualization and system documentation during the development phase. Although there are many other object-oriented modeling tools, UML is arguably the standard tool in modeling languages. This is proven by the acceptance of UML as a standard by the Object Management Group (OMG), the largest consortium in the field of business objects, so that UML is widely adopted and used by many software manufacturers.

Database Design
Analysis Stage

Data Analysis
Based on the analysis of table requirements and the required attributes, database design is as follows:

UserData
1. Id user (user Id)
2. Nama user (user Name)
3. Username User (user Username)
4. Password User (user Password)

Store Data
1. Id Toko (Store Id)
2. Nama Toko (Store Name)
3. Alamat Toko (Store Address)
4. DePenelitian Toko (Store DePenelitian)
5. Nomor Telepon Toko (Store Phone)
6. Social Media Toko (Store Social Media)
7. Website Toko (Store Website)
8. Foto Toko (Store Photos)
9. Produk yang pernah dibuat oleh toko (Store Product)

Ordering Data
1. Id pesanan (Order Id)
2. Nama karakter (Character name)
3. Series (Series)
4. DePenelitian (DePenelitian)
5. Bahan yang digunakan (Material)
6. Tanggal digunakan (Use date)
7. Tanggal pembuatan pesanan (Order date)
8. Status (Status)
9. Nomor Pengiriman (Shipping Number)
10. Jenis Pengiriman (Shipping Type)

Review Data
1. Id Review
2. Review
3. Rating kualitas produk (Quality Product Review)
4. Rating Pelayanan (Service Rating)

The software will be used by end users on a local network basis. From software analysis, it can be estimated that the software and hardware capacity needed so that the software can run properly is a unit of computer equipment which has installed Apache web server applications such as XAMPP and MySQL Database.

Database Analysis
The following is a model and table from the database design used by researchers to create a Costume Play Ordering Service Recommendation System.
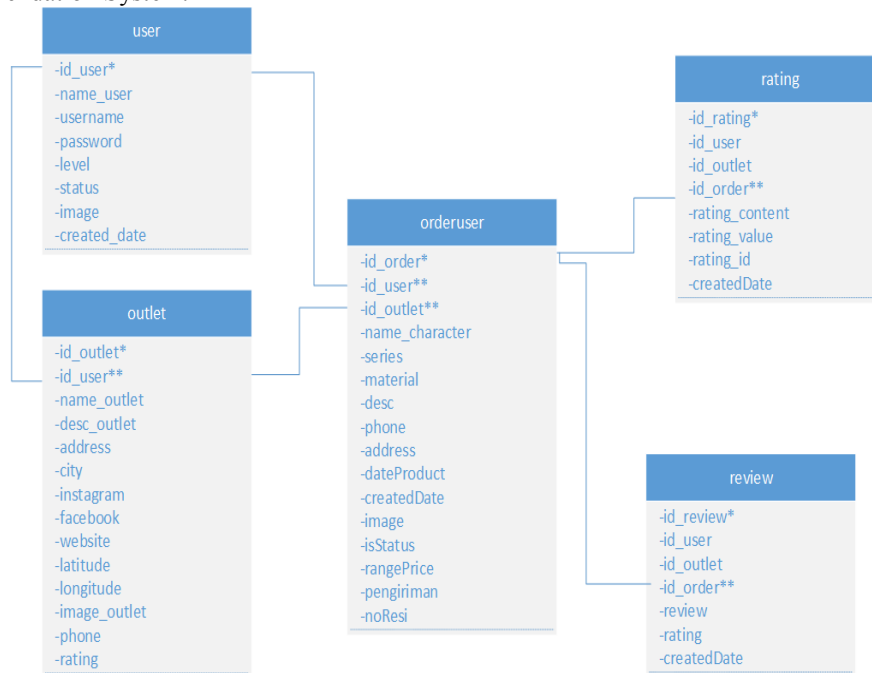

Image1:- Database Design.

Below is a database table design :
Table 1:- Users Table.

No	Attribut	Type	Length	Constraint
1	id_user	varchar	100	NOT NULL, PRIMARY KEY
2	name_user	varchar	100	NOT NULL
3	Username	varchar	100	NOT NULL
4	Password	varchar	100	NOT NULL
5	Level	int	5	NOT NULL
6	Status	varchar	10	NOT NULL
7	Image	text		NOT NULL
8	created_date	date		NOT NULL

Table 2:- Outlet Table.

No	Attribut	Type	Length	Constraint
1	id_Outlet	int	10	NOT NULL, PRIMARY KEY, AUTO_ INCREMENT
2	id_user	varchar	100	NOT NULL ,FOREIGN KEY
3	name_Outlet	varchar	100	NOT NULL
4	desc_Outlet	text		NOT NULL

5	Address	text		NOT NULL
6	City	varchar	100	NOT NULL
7	Facebook	varchar	100	NOT NULL
8	Instagram	varchar	100	NOT NULL
9	Website	varchar	100	NOT NULL
10	Latitude	varchar	100	NOT NULL
11	Longitude	varchar	100	NOT NULL
12	Image_Outlet	text		NOT NULL
13	Phone	int	15	NOT NULL
14	Rating	int	5	NOT NULL

Table 3:- Orderuser Table.

No	Attribut	Type	Length	Constraint
1	id_order	int	10	NOT NULL, PRIMARY KEY,AUTO_ INCREMENT
2	id_Outlet	int	19	NOT NULL ,FOREIGN KEY
3	id_user	varchar	100	NOT NULL ,FOREIGN KEY
5	name_character	varchar	100	NOT NULL
6	Series	varchar	100	NOT NULL
7	Material	varchar	100	NOT NULL
8	Desc	text		NOT NULL
9	Phone	int	15	NOT NULL
10	Address	text		NOT NULL
11	date_product	date		NOT NULL
12	createdDate	date		NOT NULL
13	Image	text		NOT NULL
14	isStatus	varchar	100	NOT NULL
15	rangePrice	int	10	NOT NULL
16	Pengiriman	varchar	100	NOT NULL
17	noResi	text		NOT NULL

Table 4:- Rating Table.

No	Attribut	Type	Length	Constraint
1	id_rating	int	10	NOT NULL, PRIMARY KEY,AUTO_ INCREMENT
2	id_Outlet	int	10	NOT NULL ,FOREIGN KEY
3	id_user	varchar	100	NOT NULL ,FOREIGN KEY
4	id_order	int	10	NOT NULL ,FOREIGN KEY
5	rating_content	varchar		NOT NULL
6	rating_value	int		NOT NULL
7	rating_id	int		NOT NULL
8	createdDate	date		NOT NULL

Table 5:- Review Table.

No	Attribut	Type	Length	Constraint
1	id_Review	int	10	NOT NULL, PRIMARY KEY , AUTO_ INCREMENT
2	id_user	varchar	10	NOT NULL ,FOREIGN KEY
3	id_Outlet	int	10	NOT NULL ,FOREIGN KEY
4	id_order	int	10	NOT NULL ,FOREIGN KEY
5	Review	varchar	100	NOT NULL
6	Rating	int	5	NOT NULL
7	createdDate	date		NOT NULL

Administrator UI View
The Database Design in the previous discussion can be applied to the Cosplay Making Service Outlet Selection Recommendation System as shown below :
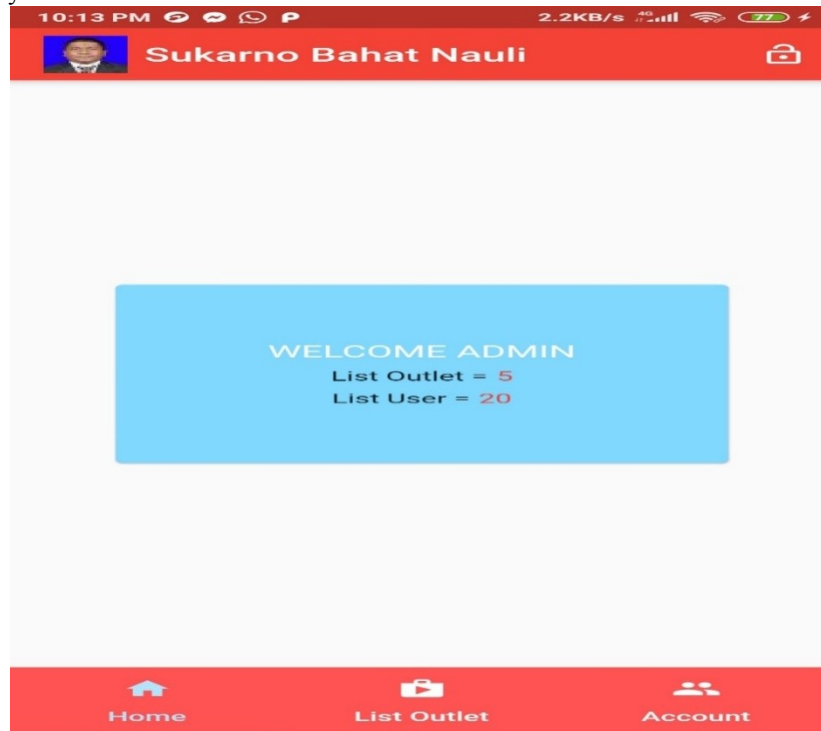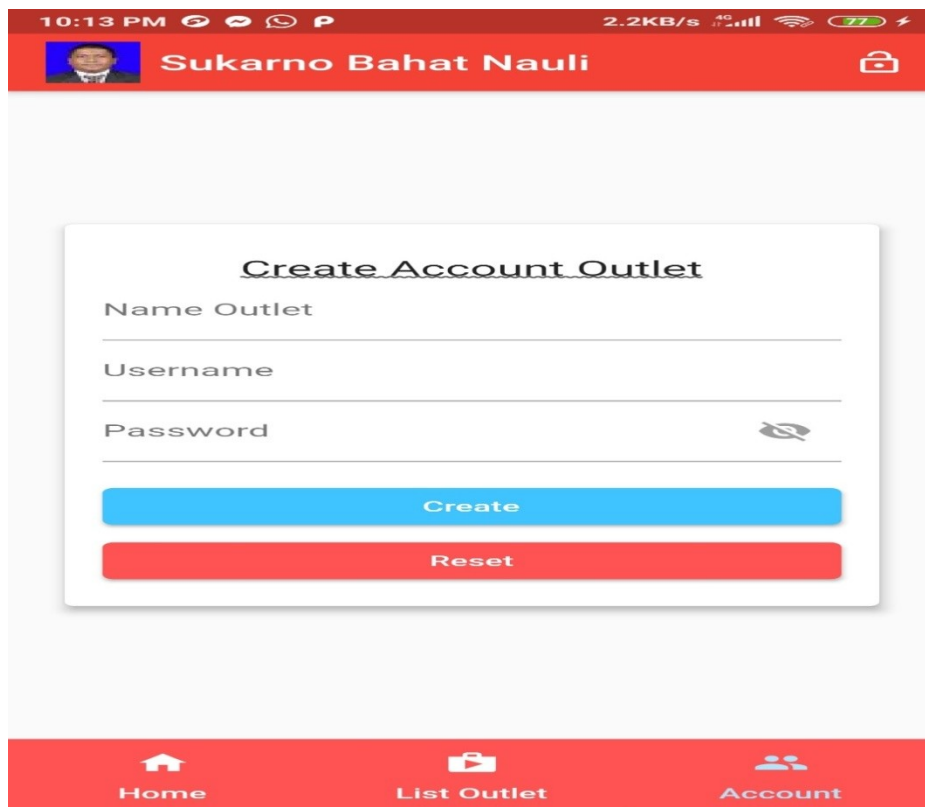

Image2:- Administrator UI View.

Image3:- Administrator View To Create Outlet Account.

Conclusion:-
Has succeeded in designing a Database for the Recommendation System for the Selection of Outlets for Costume Equipment Ordering Services which consists of a User Table, an Order Table, an Outlet Table, a Rating Table, and a Review Table, as well as a Web-based Recommendation System Application.

Further research and development is needed to add more useful feature for this web application.

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