

Development of the Secretariat Information System and Membership of the Tapak Suci Putera Muhammadiyah Using E-R Diagrams

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ABSTRACT

Tapak Suci Putera Muhammadiyah has become one of the original martial arts schools in Indonesia that has become global. On the other hand, the globalization of information and communication is developing so rapidly that it is not supported by the optimal use of technology. The purpose of this study is to analyze the optimal triggers for the use of information technology for the development of the Tapak Suci Putera Muhammadiyah organization. This study uses a qualitative method with data collection techniques through interviews, observations, and literature studies. The analysis method using ERD (Entity Relationship Diagram) will form an information database. This research results that the information system on the official website to build the secretariat and membership of Tapak Suci by using the database resulting from the transformation of the E-R diagram will be faster, easier, and expected in accordance with the needs and expectations of users in getting clearer information

INTRODUCTION

The martial sport of pencak silat is now starting to develop throughout the archipelago and even abroad. The emergence of talented athletes in the field of martial arts has further added to the competition in the world of pencak silat martial arts achievements. Not only as an achievement, but also because of the preservation of Indonesia's original culture with its local wisdom. The spiritual aspect and training that is thick and different in each pencak silat school makes the playing characteristics of the athletes different. According to Erwin (2015: 13) pencak silat is a martial arts system inherited by the ancestors as the culture of the Indonesia nation so it needs to be preserved, fostered, and developed. The diversity of the Indonesia nation is not a barrier to the development of pencak silat martial arts throughout Indonesia. This diversity creates its own characteristics for pencak silat, so that many pencak silat schools have emerged in every corner of the nation with different styles and techniques. The development of pencak silat is also inseparable from the recognition of Unesco (United Nation Educational, Scientific and Cultural Organization) for Indonesia's Cultural Heritage. At the 14th Session of the Intergovernmental Committee for the Safeguarding of the Intangible Cultural Heritage, which took place in Bogota, Colombia, December 9-14, 2019, there were 42 nominations to be inscribed as intangible cultural heritage, including the pencak silat tradition from Indonesia.

Tapak Suci is one of the martial arts colleges that has now gone global. Martial arts schools that are members of the Indonesia Pencak Silat Association or IPSI are developing in many countries, such as: in Singapore, Taiwan, Brunei Darussalam, Taiwan, Pakistan, Egypt, and Algeria. Later in continental Europe, the Holy Sites have been imprinted in France, Germany, Austria, and the Netherlands where the population of those countries is dominated by non-Muslims.

In Indonesia, almost all provinces have Tapak Suci Regional Leaders. The leadership of the Sacred Site Region is a level in the organizational structure at the provincial level and is domiciled in the provincial capital/region level I.

Based on the official website of Tapak Suci <https://tapaksuci.or.id/> of the 34 provinces in Indonesia, 33 of them already have a Tapak Suci Wilayah Leader, only one does not exist, namely North Maluku Province. However, how many Tapak Suci regional leaders are in each Regional Leader or throughout Indonesia, where is the address of the secretariat, and also the place of training? How many branch leaders are there in each regional leadership or in each regional leadership or even throughout Indonesia? Is the address of the secretariat office and the place of practice belonging to the holy site/Muhammadiyah or belonging to someone else? The information is still not available or difficult to obtain to be presented which makes it easier for the public to access.

Important information will be very useful not only for the relevant administrators in taking policies, but also for students, cadres, warriors and even Muhammadiyah citizens who have an emotional bond with Tapak Suci.

For example, if a student or cadre of Tapak Suci moves his residence from one province to another, then when he wants to continue his training or activities as a student or cadre of Tapak Suci, he certainly needs information related to this. Is there a branch in the new domicile area that can facilitate to continue the training level?

No less important information is how many students, cadres, warriors and trainers are there at Tapak Suci? More specifically, the number of students based on their level, for example, elementary level students, one to four, as well as cadres, warriors and coaches, how many are there? This is certainly beneficial for the management of Tapak Suci according to the level of organizational structure (Central, Regional, Representative of Overseas Regions, Regions, and Branches) in taking strategic policies related to the development of students and cadres as well as to map the number of coaches, students, to the alignment of the quality, curriculum and potential of the Tapak Suci martial arts college.

The above problem attracted the author's interest to take this research with the title "Development of Secretariat Information System and Membership of Tapak Suci Putera Muhammadiyah Using Entity-Relationship Diagram". In addition, Tapak Suci has currently developed rapidly in various regions both domestically and abroad, the nature of this Tapak Suci martial arts school is open, meaning that it can be followed by all circles, even worldwide. With this it will be very useful to have a secretariat and membership information system with a good database (database), designed using E-R diagrams, with the hope that the system will be easy to develop, effective, fast, and accurate in data search. This means that it can be followed by all circles whose reach has no limits. With this, it will be very useful to have a secretariat and membership information system with a good database (database), designed using E-R diagrams, with the hope that the system will be easy to develop, effective, fast and accurate in data search.

LITERATURE REVIEW

A. History of Pencak Silat

Pencak silat is one of the original cultures of the Indonesia nation, where it is strongly believed by its warriors and pencak silat experts that the Malay people at that time created and used this martial art since prehistoric times. Because at that time humans had to face harsh nature with the aim of maintaining their survival (survive) by fighting ferocious animals and hunting, which in the end humans developed martial movements (Johansyah L, 2004). Agung Nugroho (2007) stated that pencak silat is the original cultural heritage of the Indonesia nation, which consists of various pencak silat schools/schools. The history of the birth of pencak silat is not known for sure, but it is possible that pencak silat martial arts have existed in the country since human civilization in Indonesia. According to Notosoejitno (1999: 4-6) the development of pencak silat is divided into 2 eras, namely the prehistoric era and the historical era. In the principle of pencak silat itself, it is a defense or self-defense against the influence of threats that can endanger individuals.

B. History of Tapak Suci Putera Muhammadiyah

Tapak Suci Putera Muhammadiyah or Tapak Suci is one of the autonomous organizations in the Muhammadiyah Organization in the field of martial arts which is also designated by PB IPSI as one of the historical universities for the development of pencak silat in Indonesia. The figures who played an important role in the formation of the Tapak Suci Putera Muhammadiyah school.

Table 1. Founding Figures of Tapak Suci Putera Muhammadiyah in Indonesia

Name	Role
Moh. Rustam Djundab	Compiler of the AD/ART concept of Tapak Suci
H Djarnawi Hadikusumo	Compiler of prayers and pledges of members of Tapak Suci
Moh. Fahmi Ishom	Designer of the emblem of the Tapak Suci school
Suharto Suja'	Member emblem designer
Adjib Hamzah	Designer of the emblem of the core squad 'Kasegu'
Moh. Zundar Wiesman dan Anis Susanto	Designer of Tapak Suci school uniform

Source: Data Processed (2023)

C. Sacred Sites Organization

Based on the organizational structure, membership, and level of education in the Sacred Site (Nisa, 2021), it can be detailed as follows:

a) The organizational structure of Tapak Suci consists of:

1. The Central Tapak Suci (PP) Leadership, covering the unity of the territory within the Unitary State of the Republic of Indonesia and Regional Representatives Abroad
2. Regional Leaders (Regional Leaders), covering regional units in one province
3. Regional Representative Leader (Regional Representative), covering the existence of Sacred Sites in one country abroad
4. Regional Leaders (Regional Leaders), including cities or districts.
5. Branch Leaders to carry out the operational tasks of the Tapak Suci regional leadership can form branches.

b) Membership of Tapak Suci consists of:

1. Ordinary Members are Tapak Suci Students.
2. Full Members are Cadres and Warriors.
3. Honorary Members are individuals who are Muslims who have contributed to the Sacred Site and or because of their authority and expertise are willing to help the Sacred Site.

c) The level of education of Tapak Suci is as follows:

1. Student Education Levels
 - a. Basic Students

- b. Student One
 - c. Student Two
 - d. Student Three
 - e. Student Four
2. Cadre Education Level 5 (five) levels:
- a. Basic Cadre Level
 - b. Young Cadre Level
 - c. Intermediate Cadre Level
 - d. Main Cadre Level
 - e. Head Cadre Level
3. Five levels of Warrior Development:
- a. Young Swordsman Level
 - b. Intermediate Warrior Level
 - c. Head Warrior Level
 - d. Master Warrior Tier
 - e. Great Swordsman Tier

D. Database System

1. Definition of Database

Based on a database system, it is basically a computerized record storage; It is a computerized system whose overall purpose is to store information and allow users to retrieve and update the information upon request. The information discussed can be meaningful to any individual or organization involved, which is needed to assist in the general process of running the business of that individual or organization.

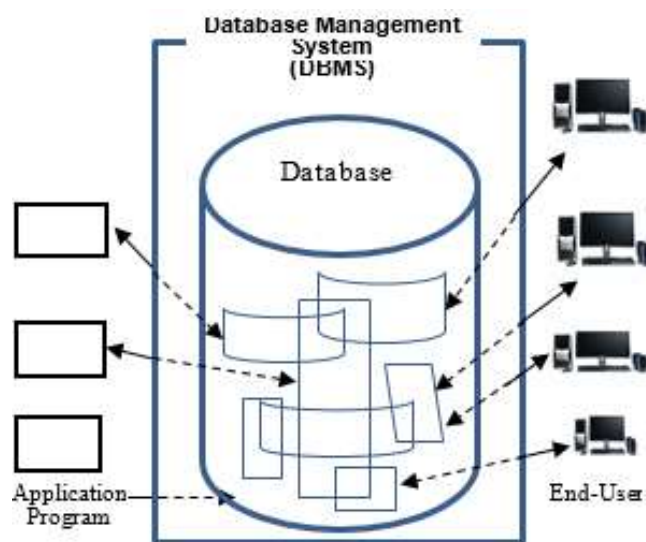


Figure 1. Database Management System (DBMS)

Source: Data Processed (2023)

E. Database Creation

Based on figure 1 above, conceptually, database creation consists of three main stages. In a conceptual model, it must first determine what data is needed, then describe that data and put it into the database.

1. Types of Databases

Based on the types of databases including:

1. *Operational Database*

It is a transaction database that stores detailed data needed to support a company's business operations.

2. *Distributed Database*

It is a distributed database and is a replica (mirror) of the database from the server to other networks in the company (intranet, extranet) or in the internet/www network. This database must always be updated consistently, so that all users can use the data that is always up-to-date.

3. *External Databases*

Databases sourced from external access such as commercial services through the www online network include various types of hyperlink services from multimedia documents, such as: science and technology, statistics, economics, demography, entertainment, job vacancies, humanities, and so on.

F. Information Systems

Information is not only used for internal purposes within the organization, but also used by external parties (outside the organization). Based on these various definitions, it can be concluded that information systems include a number of components (humans, computers, information technology and work procedures), there is something that is processed (data becomes information), and is intended to achieve a goal or goal.

- Information management, based on the figure above, information management is all activities related to the acquisition of information, the most effective use of information as much as possible, and also the disposal of information (which is no longer useful) at the right time.
- Data and Information, conceptually data is a description of objects, events, activities and transactions, which have no meaning or have no direct effect on the user. Suppose you have a sequence of numbers like this: 6, 30, 27 6.32 28 6.3427. Meanwhile, information is data that has been processed into a form that is meaningful to the recipient and useful in making decisions now or in the future.

G. Internet and Web

• Internet

The Internet is a fast-growing computer network that consists of millions of corporate, educational and government networks that connect hundreds of millions of computers and their users in more than 200 countries.

• Web Browser/Web Explorer

A software package that provides a user interface for accessing Internet Web sites, intranets, and extranets. Explorer becomes a multifunctional universal client for sending and receiving e-mails, downloading files, accessing Apple Java, participating in discussion groups, developing web pages, and other extranet applications.

• Web Server

A web server is a service on a server that allows users who use their own computers or called clients to access web pages on a web server.

- **Interface**

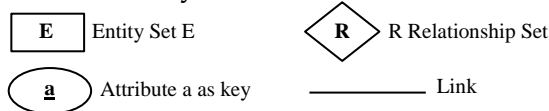
A shared boundary, such as a boundary between two systems. For example, the boundary between a computer and its peripheral equipment.

H. Diagram Entity-Relationship (Diagram E-R)

Based on the Entity-Relationship model which contains the components of an Entity Set and a Relationship Set, each equipped with attributes that represent all the facts of the 'real world' that we are reviewing, it can be depicted more systematically using the E-R Diagram.

1. Symbolic Notation

The symbolic notations in the E-R Diagram that we can use are:



Relationship cardinality can be expressed by the number of branch lines or by the use of numbers (1 and 1 for one-to-one relations, and N for one-to-many relations or N and N for many-to-many relations).

a) Entity Variants

Ideally, the entity set involved in an E-R diagram is a strong entity set. Such an entity set has no dependencies on other entity sets. However, in the creation of an E-R diagram, it is not always possible to involve such a set of entities. There are times when it also involves weak entity sets (Weak Entity Sets) or is part of other entity sets (Subtype Entities).

b) Relationship Variants

The relationship that occurs between two different sets of entities is called a Binary Relation, and is the most commonly used relation. However, there are also times when relationships that only involve a set of entities or more than two entities.

1. Unary Relation.

It is a relationship that occurs from a set of entities to the same set of entities.

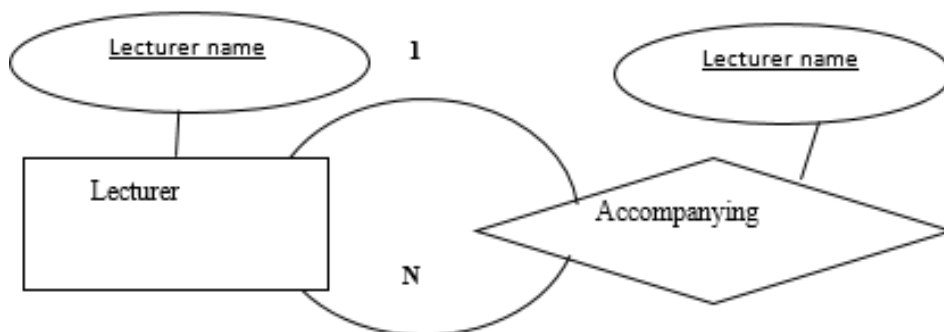


Figure 2. Processed Data (2021)

2. Multi-Entity Relations (N-ary Relation).

It is a relation of 3 (three) sets or more.

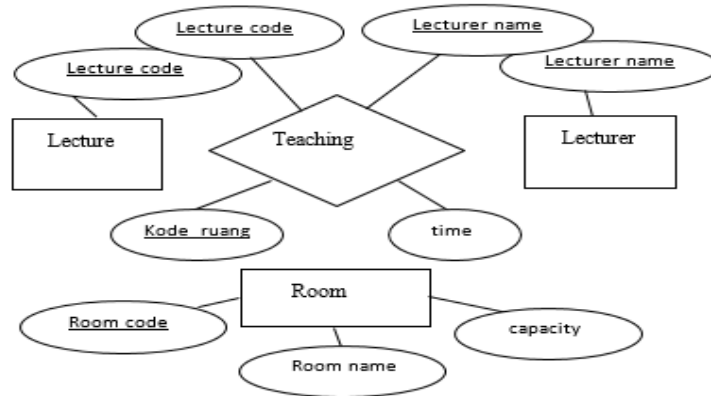


Figure 3. Multi-Entity Relations (N-ary Relations) of 3 Entity Sets
Source: Processed Data (2021)

3. Redundant Relation.

It is a relationship of 3 (three) or more sets. There are times when the relationship that arises between two sets of entities is not just one relationship, but there is more than one relationship. Such a relationship is called a Redundant Relation.

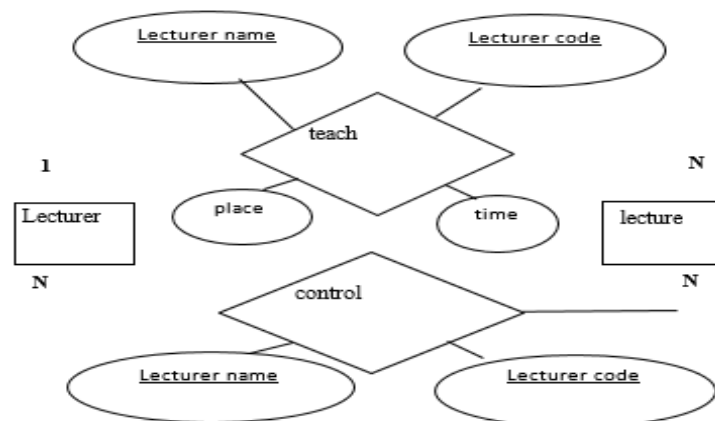


Figure 4. Dual Relations
Source: processed data (2021)

c) Specialization and Generalization

If you start with a set of entities and then do a grouping that gives birth to a new set of entities (a top-down process), then the individual is doing specialization. If the approach is bottom-up, first separate and then become one. Such a process is called Generalization.

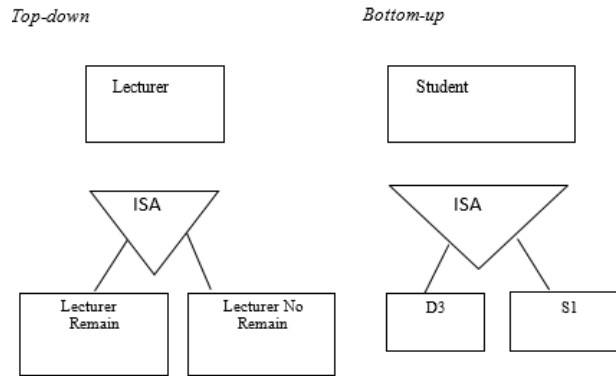


Figure 5. Specialization and Generalization
 Source: Processed Data (2021)

METHODOLOGY

A. System Development Methods

Based on Rapid Application Development (RAD) is one of the information system development methods which is an alternative to SDLC (Software Development Life Cycle) to be faster in development. The type of RAD used is Prototyping.

Prototyping is the process of building a model of a system, used to help system designers build information systems that are intuitive and easy to manipulate for the end user. Prototyping is an iterative process that is part of the analysis phase of the development lifecycle of a system. User feedback obtained from the development of a physical system that can be touched and seen by users facilitates evaluation responses that analysts can use to modify existing requirements as well as develop new ones. Here's how prototyping works:

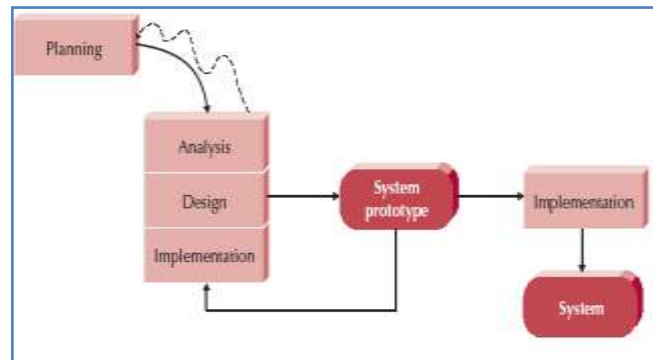


Figure 6. Prototyping Model
 Source: Data Processed (2021)

From figure 6 above, prototyping model provides the following flow information:

1. Database design is conceptually created using E-R (Entity-Relationship Diagram) Diagram as a representation of the database before finally being implemented into tables into a database.
2. Software program design, representing the interface or interface, and the entire coding procedure. Interface allows users to enter instructions and

information into the system or get information according to user needs and expectations.

B. Data Collection Methods

The methods used in the collection process of this research include:

1) Interview

The author conducted an interview with the management of the regional leadership (Regional Executive) of Tapak Suci West Java and the regional leadership of 122 Bogor City to get a more detailed overview of the membership system, education and training system, students, cadres and warriors as well as activity units at the Tapak Suci Putera Muhammadiyah Martial Arts College.

2) Observation

Direct observation of the profile of the organization and the object of research. Observation techniques are carried out by structured observation by preparing a list of data needs and data sources. The observation process is carried out to learn the flow of data collection, analysis, goals, and organizational structure.

3) Study book

The method of data collection obtained by studying, researching, and reading books, journals, and theses related to the development of information systems, the organization of Tapak Suci and the development of databases, especially those that use the concept of Entity-Relationship Diagram or Diagram E-R.

RESULT AND DISCUSSION

Database Design

The design of the membership information system database and activity units of the Holy Site is illustrated using the Entity-Relationship Diagram (E-R Diagram) as follows:

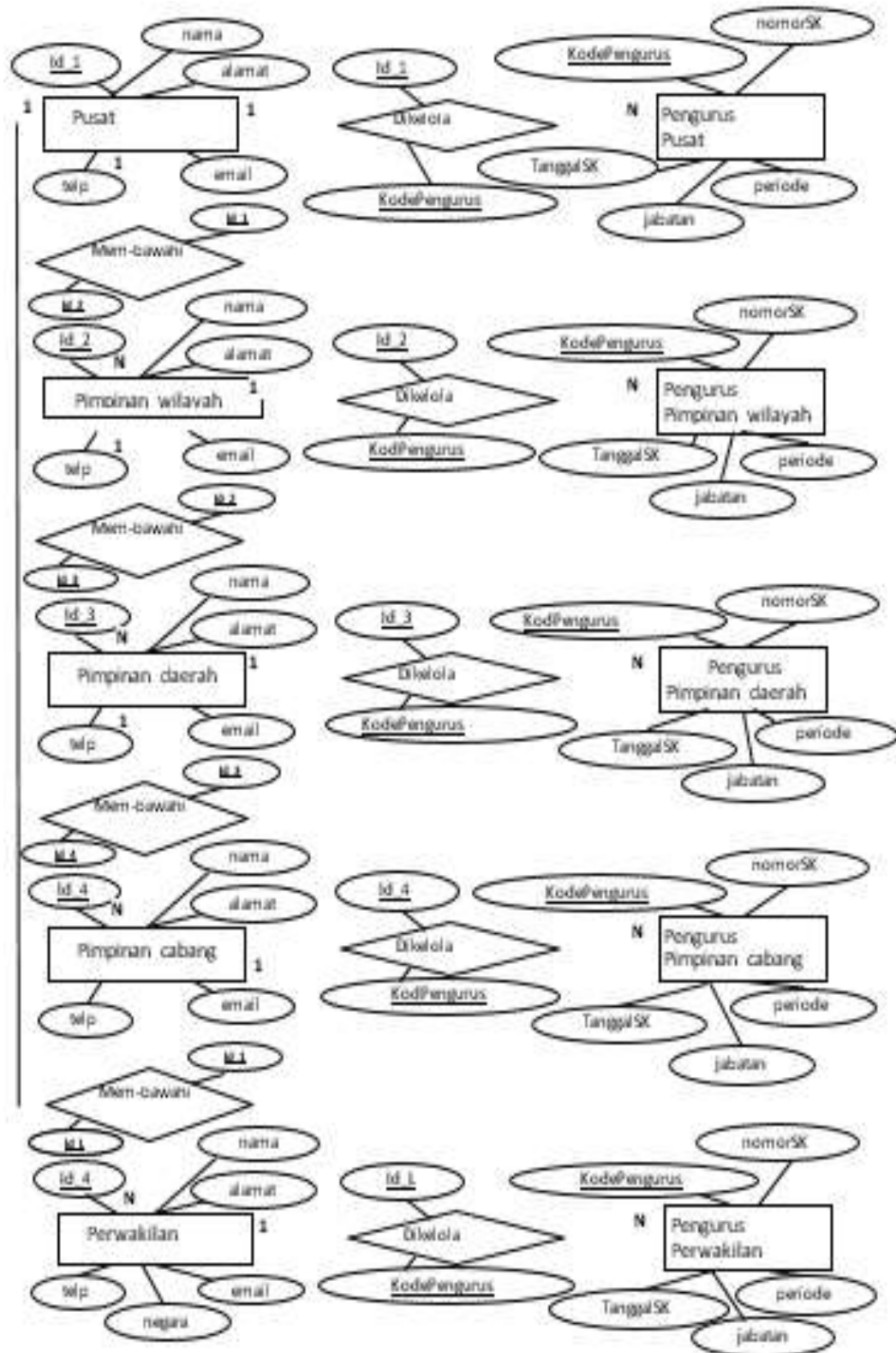


Figure 7. Database Design

Desain Interface

a) Website Resmi Tapak Suci

Tapak Suci Putera Muhammadiyah currently has an official website with URL: <https://tapaksuci.or.id/> which has a fairly attractive appearance and has

great potential to be developed. The display for the main page of the holy site website is as shown in the image below.



Figure 8. View of the Official Homepage of Tapak Suci
Source: Data processed by screenshot (2/3/2021)

In the upper right corner there is info which consists of several submenus. If the info menu is selected, 5 (five) options or menus will appear (Regional Leaders, Regional Leaders, Branches, Contact, and Find Members) as follows:



Figure 9. Info Menu Display with 5 Submenus
Source: Data Processed by Screenshot (2/3/2021)

If you click on the regional leader info, 10 (default number) of the regional leader's name will appear as follows:

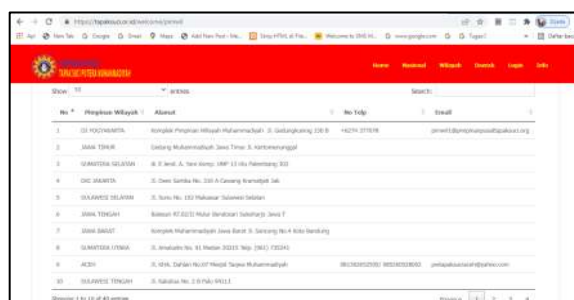


Figure 10. List of the First 10 Regional Leaders
Source: Data Processed by Screenshot (2/3/2021)

By changing the default show from 10 to 100, all names of regional leaders (provincial level) and regional representatives (overseas) will appear as many as 40 (forty) lists consisting of 33 regional leaders from 34 provinces throughout Indonesia and 7 regional representatives (Netherlands, Singapore, Timor Leste, Germany, Egypt, Czechia or Czech, and Taiwan) into one list.

There is no choice based on certain criteria or based on keywords yet. In addition, if selected regional leaders (cities/districts) will appear regional leaders throughout Indonesia, there is no filtering based on specific regional or provincial leaders. Even though users may only want to see the list of regional leaders in a certain province. The same thing for branch leaders there is no filtering based on regional leaders at the district/city level and info mengenai training schedules and training venues, especially in each regional or branch leader.

DISCUSSION

A. System Requirements Analysis

Based on the results of the analysis that the author has done, there are several needs of users, both administrators, coaches, students and the general public for the information system on the official website of Tapak Suci <https://tapaksuci.or.id/> as follows:

1. There has been no search for data on the name and address of the secretariat based on certain criteria, for example searching for data on the names of regional leaders (city/district level) based on regional leaders (regions or provinces), there is indeed a menu/choice of regional leaders but it is only to issue all data on the names and addresses of regional leaders throughout Indonesia. Likewise, for branch leaders (sub-district level/below regional leaders) there is no filter based on their regional leaders (cities/districts), even though users only want to find branch leaders in certain cities/regencies, not all of Indonesia.
2. There has been no search for address and secretariat data based on regional (foreign) and national representatives.
3. There is no search for data on training schedules and venues based on their management, both the center, regional leaders, regional representatives, regional leaders, and branch leaders.
4. There is no data on the number of members who have NBTS (Standard Number of Tapak Suci), the number of warriors (including honorary warriors), cadres and students of Tapak Suci, either as a whole or per regional leader, regional representatives, regional leaders, and branch leaders.
5. It would be more useful if there was information, especially for students, cadres and warriors about the names of the moves at the Sacred Site in complete/detailed and can be found based on targeting tools, targets, and trajectories per level of education.

This is in line with research conducted by (Syamsuri, 2017) that the activities of analyzing, organizing, measuring, and grouping according to categories provide convenience in the formation of data informed on the website.

B. System Design

The design of the membership information system and activity units of Tapak Suci is documented with the UML diagram (Ardhy, 2023) as follows:

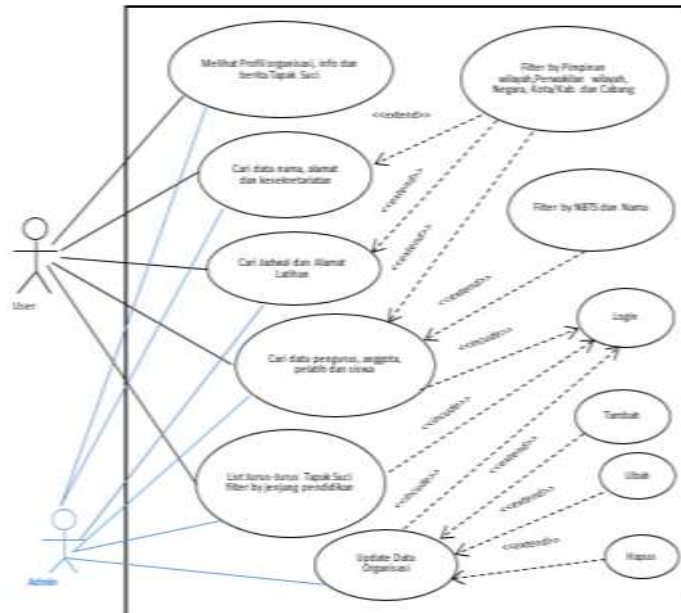


Figure 11. E-R Diagram of TS Members and Administrators
Source: Data Processed (2021)

CONCLUSION AND RECOMMENDATION

Database management is structured and has a good database, has a significant impact on the development and progress of the organization. (Bakhtiar Subardi, 2021).

Here's a database diagram flow that can improve performance and make it easier to scale your organization's network in a modern way.

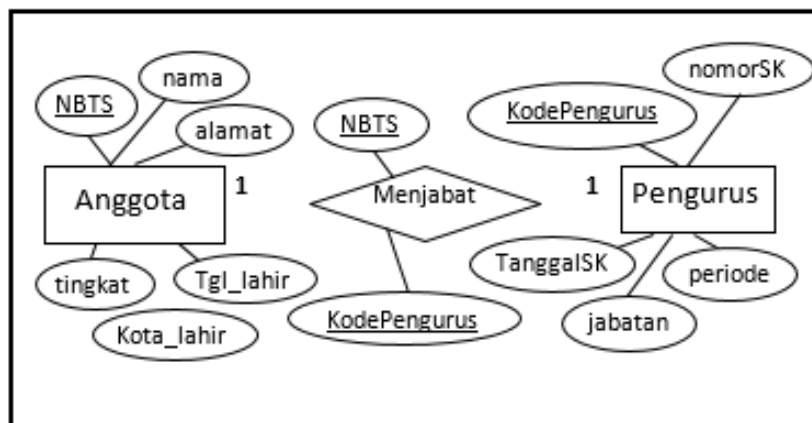


Figure 12. Member Top-down Specialization Diagram
Source: Data Processed (2021)

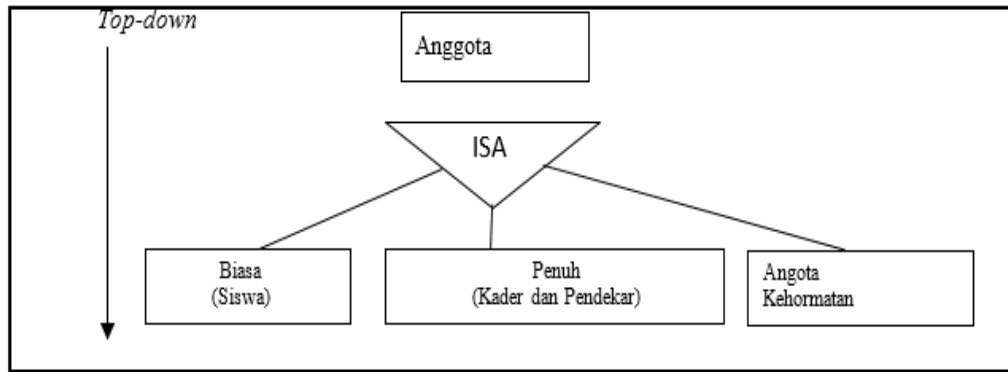


Figure 13. Generalization (Bottom-Up) and Specialization (Top-Down) Diagram of Management and Trainers
 Source: Data processed (2021)

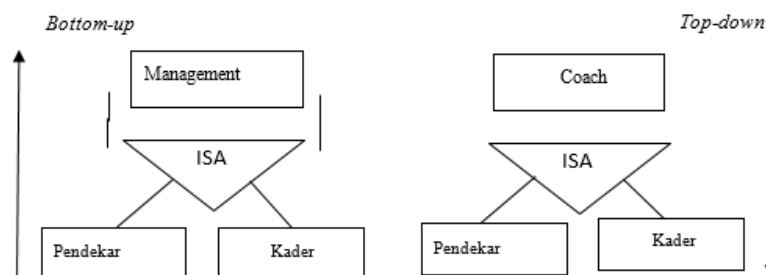


Figure 14. TS Training Multi Entity E-R Diagram

Interface Design

a) Official Website of Tapak Suci

Tapak Suci Putera Muhammadiyah currently has an official website with URL: <https://tapaksuci.or.id/> which has a fairly attractive appearance and has great potential to be developed. The display for the main page of the holy site we



Figure 15. View of the official homepage of Tapak Suci
 Source: Screenshot from Tapak Suci homepage (2/3/2021)

In the upper right corner there is info which consists of several submenus. If the info menu is selected, 5 (five) options or menus will appear (Regional leaders, Branch, Contact and Find Members) as follows:



Figure 16. Info Menu Display with 5 Submenus
Source: Data processed by screenshot (2/3/2021)

If you click on the regional leader's info, 10 default numbers of names will appear as follows:

No	Provinsi Wilayah	Alamat	No Telp	Email
1	DI YOGYAKARTA	Komplek Pimpinan Wilayah Muhammadiyah - Jl. Gadjahmang 120 B	+6274 277878	provdi@pimpinanwilayahdi.org
2	JAWA TIMUR	Gedung Muhammadiyah Jawa Timur - Jl. Kertorekuno 101		
3	DI BANTEN	Jl. P. Jend. A. Yani Kemp. SMP 11 Rta Palembang 333		
4	DI SUMATERA UTARA	Jl. Dewi Sartika No. 201 A Gunung Kencana 101		
5	DI JAWA BARAT	Jl. Suni No. 123 Makasar Sulawesi Selatan		
6	JAWA TENGAH	Blok B1 R2011 Mah. Pendidikan Subhaji Jawa T		
7	JAWA BARAT	Komplek Muhammadiyah Jawa Barat - Sarung No.4 Rika Sarung		
8	DI BANTEN	Jl. Amalita No. 41 Medan 20115 Telp. (061) 722241		
9	DI DKI JAKARTA	Jl. KH. Dahlan No.007 Masjid Tajwa Muhammadiyah	081343322201 08134332203	provdi@pimpinanwilayahdi.org
10	DI JAWA BARAT	Jl. Garuda No. 2 B PAU 09111		

Figure 17. List of the First 10 Regional Leaders
Source: Data Processed by Screenshot (21/2/2021)

By changing the default show from 10 to 100, all names of regional leaders (provincial level) and regional representatives (overseas) will appear as many as 40 (forty) lists consisting of 33 regional leaders from 34 provinces throughout Indonesia and 7 regional representatives (Netherlands, Singapore, Timor Leste, Germany, Egypt, Czechia or Czech Republic and Taiwan) into one list.

There is no choice based on certain criteria or based on keywords yet. In addition, if selected regional leaders (cities/districts) will appear regional leaders throughout Indonesia, there is no filtering based on specific regional or provincial leaders. Even though users may only want to see the list of regional leaders in a certain province. The same thing for branch leaders there is no filtering based on regional leaders at the district/city level and information about training schedules and training venues, especially in each regional leader or branch leader.

b) Interface Addition and Filtering per Category

By adding a new interface and a database developed based on the previously presented E-R diagram, the data can be filtered based on certain criteria.

1. Regency/City Regional Leaders

The list of regional leaders can be searched by Regional Leaders (provinces) or by the name of the Regional Leaders directly or all Regional Leaders in Indonesia are displayed by blanking all the criteria and clicking search.

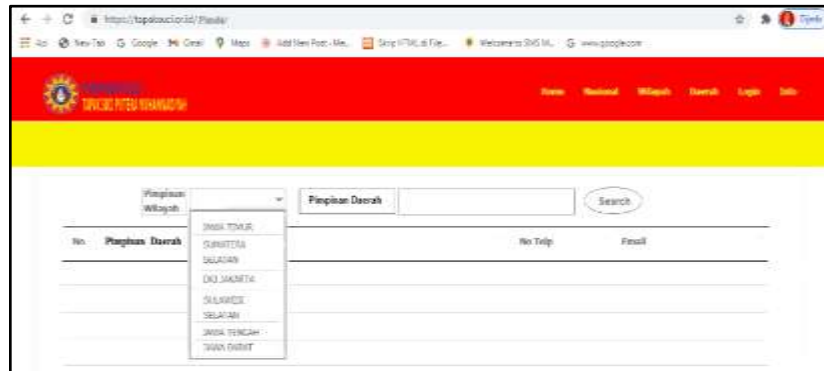


Figure 18. New Interface for Regional Leader Filtering by Province
Source: Data Processed by Screenshot (2021)

If all are left blank (Regional Leaders) continue by clicking the search button, a list of all Regional Leaders in Indonesia will appear. Meanwhile, if the regional leader is elected or typed "WEST JAVA" and the regional leader is filled in with the name "Bogor" only, a list of regional leaders containing the name "BOGOR" or "bogor" or "Bogor" will be issued.



Figure 19. New interface for Filtering Regional Leaders by Regional Leaders and City and/or District Name
Source: Data Processed by Screenshot (2021)

If you click on the search for Figure 15, it will appear like the image below:



Figure 20. Display of the List of Regional Leaders in West Java Whose Names Contain the Word "Bogor"

Source: Data Processed by Screenshot (2021)

2. Regional Leadership Branch

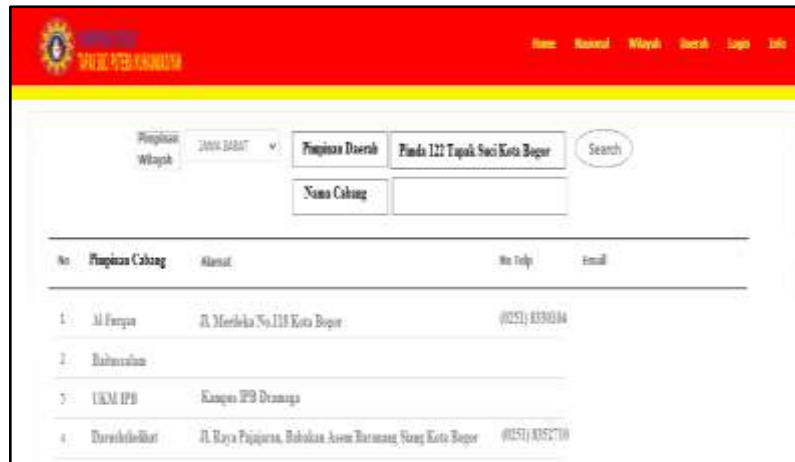
Each regional leader can have one or more Tapak Suci branches. This branch data can be searched by branch name or by regional leaders, regional leaders or all branches in Indonesia are displayed.



Figure 21. Interface for Branch Search by Multiple Criteria or No Criteria (All Branches)

Source: Data Processed by Screenshot (2021)

If the Search button is clicked (Figure 18), the name of the Branch of regional leaders 122 Tapak Suci Bogor City will be displayed as shown in Figure 10 below.



(Note: The Data Has Not Been Updated, Not the Actual Data)

Figure 22. List of Branches in the Regional Executive of 122 Tapak Suci Bogor City

Source: Data Processed by Screenshot (2021)

3. Detailed Information of Regional and Branch Leaders

If you click on No.1 or line 1 (in figure 19), you will get information about the training venue and schedule, and whether the training venue belongs to Tapak Suci or not and information on the number of students, cadres, warriors and trainers for the Tapak Suci Branch in regional leaders 122 Bogor City, as seen in the picture below.



Figure 23. Information on the Al-Furqan Sacred Site Branch Regional Leader 122 TS Bogor City

Source: Data Processed by Screenshot (2021)

In the picture above, you can find information about the place and schedule of training. Other information presented is about the status of the place belonging to TS or Muhammadiyah Organization or not, and some other information, such as: the number of students, cadres, warriors, and trainers can be known in full to the people who access.

4. Detailed Information of All Moves at the Sacred Site

Tapak Suci has 8 basic moves, where each move is further developed into various moves. Each move has a target, a target and a trajectory.

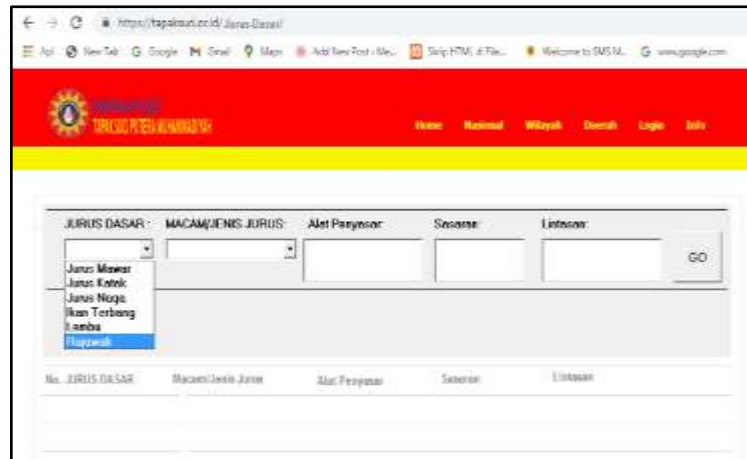


Figure 24. Interface for Searching for Various Tapak Suci Moves Along with Details of Targeting Tools, Targets, and Trajectories
Source: Data Processed by Screenshot (2021)

If one of the basic moves (Figure 20) is selected and the other criteria are cleared, then click the GO button, the type/type of basic move for the basic move unit along with the targeting tool, target and trajectory will be displayed. The search can also be done based on the target, or other criteria, for example you want to see what moves are the target of the heartburn.

Conclusion

From the entire research that has been carried out, several things can be concluded, namely:

1. By knowing the relationships between entities and degrees/cardinality along with their attributes in the form of E-R diagrams, a better database can be produced, namely the number and structure of tables and their keys according to their types and functions.
2. A faster, more efficient, and flexible data retrieval system using criteria but still accurate. For example, in the case of searching for secretariat data and its administrators, because they are grouped in one table (the result of the transformation of the E-R diagram), the search will be faster because it does not use Join (only one table).

In the end, building a secretariat and membership information system of Tapak Suci using the database resulting from the transformation of the E-R diagram will be faster, easier and expected in accordance with user needs and expectations.

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