



# UTM

UNIVERSITI TEKNOLOGI MALAYSIA

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## FACULTY OF COMPUTING

### SEMESTER 2 2023/2024

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**SECP2613 SYSTEM ANALYSIS AND DESIGN**

**SECTION 01**

**Project Proposal and Planning**

**LECTURER: DR. MUHAMMAD IQBAL TARIQ BIN IDRIS**

**GROUP TECH HI-FIVE**

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## **1.0 Introduction**

This proposal offers practical solutions to **enhance the efficiency and effectiveness** of Koperasi Kakitangan Daerah Kelantan Berhad (KADA), particularly in streamlining its member registration and loan application processes. Through meticulous observation, research, and analysis, our aim is to **address the main challenges faced by KADA's manual operations** and **provide customised solutions** to address these problems. The proposal **outlines our information gathering methods, evaluates the background of KADA, investigates the current system's operation, identifies key issues, presents solutions, and maps out project planning and analysis**. By providing clear insights and actionable recommendations, this proposal aims to **empower KADA with valuable strategies for enhancing its application procedures**.

## **2.0 Information Gathering Process**

### **2.1 Method used**

In this project, we have chosen to employ an interactive method, specifically **interviews**, for gathering information. Interviews offer us the opportunity to **directly engage with the users and stakeholders**, facilitating a **deeper understanding** of their **needs and requirements**.

During the **online meeting session** with Koperasi Kakitangan Daerah Kelantan Berhad (KADA) via Webex on 14 May 2024, their representative, Encik Ahmad **shared** insights into their **existing system**, which is the **entirely manual process**. After the sharing, our class **prepared various questions** to learn more about their operations. Encik Ahmad kindly participated in the **Q&A interview session**, giving us valuable insights into KADA's requirements and system needs.

After the online meeting, we created a **WhatsApp group**. This group includes **our lecturers, representatives from each team and important personnel from KADA**. It serves as a platform for **quick clarification on any unclear points**, ensuring efficient problem-solving and contributing to a system design that meets KADA's requirements. By actively engaging with stakeholders through interviews, we ensured that our proposed system **aligns closely with KADA's objectives and enhances operational efficiency**.

In addition to interviews and group discussions, our methodology also encompassed an unobtrusive approach through **observation**. We closely **observed systems similar to KADA's, comparing their processes** to those currently employed by KADA. This comparative analysis allowed us to **understand the unique characteristics and advantages of each approach**. Furthermore, we directly **observed KADA's existing systems**, contemplating how manual processes could be seamlessly integrated into a unified system to better serve their organisation.

This observational component proved invaluable in our effort to comprehensively **understand KADA's operational landscape** and **identify opportunities for system enhancement**.

The systems that we observed include:

- <https://edaftar.skm.gov.my>
- <http://www.kada.gov.my/>

## 2.2 Summary from method used

The online sessions and group discussions served as invaluable platforms for gathering information about KADA's operations. These gathering methods allowed us to **identify the shortcomings of the existing system** and **collectively agree on the potential for designing a system** to address these challenges. Through direct engagement with KADA representatives and collaborative discussions within our team, we gained a comprehensive **understanding of key processes** such as **member registration** and **member financing application** (loan). Furthermore, these interactions allowed us to **delve into crucial cooperative terminology** like "Modal Syer" and "Modal Yuran," **providing us with the necessary foundation for planning and designing the system**. Observations also helped us **understand the practical application** and **user interactions with the current system**, highlighting areas for improvement. Overall, the insights gleaned from these sessions have been instrumental in shaping our approach and ensuring alignment with KADA's specific needs and objectives.

Example of questions asked by our group:

1. Regarding the shared form, the amount of share (RM300) needs to be paid off within 6 months, can it be settled with the monthly deduction of RM55 from salary? (close-ended question)
2. What is the minimum amount for the fee and contribution categories in the membership application form? (close-ended question)
3. What is the difference between *Modal Syer* and *Modal Yuran*? (close-ended question)
4. What is the difference between Member Fund and Member Savings, Fixed Deposit? (close-ended question)

## 3.0 Background Study

### 3.1 Overview of the industry

In this project, we are working with Koperasi Kakitangan Daerah Kelantan Berhad (KADA), located at 981, Jalan Dato Lundang, 15200 Kota Bharu, Kelantan. KADA is a **significant cooperative** in Malaysia, established to **provide financial services and social services to the employees of the Lembaga Kemajuan Pertanian Kemubu and its members**. The cooperative plays an important role in **enhancing the economic well-being** of its members through its savings, loan facilities, and share services, exemplifying the principles of member ownership, democratic control, and mutual benefit.

### 3.2 Existing Business Process

The current system for managing applications is **entirely manual**, leading to **inefficiencies and limited productivity**. Applicants are required to fill out and submit their applications via **paper forms**, and staff must **manually verify information and check eligibility criteria**. The review process is also conducted **manually**, which can be **time-consuming and prone to errors**. The sample of paper forms are listed below:

#### 3.2.1 Member Registration Form

In order to become a member of KADA, applicants are required to fill out the member registration form with their personal details. The form will be received by KADA and the application will be evaluated in a board meeting later.

KOPERASI KAKITANGAN KADA KELANTAN BERHAD

PERMOHONAN MENJADI ANGGOTA

NAMA \_\_\_\_\_  
NO. KP \_\_\_\_\_  
TARAF PERKAHWINAN \_\_\_\_\_  
ALAMAT RUMAH \_\_\_\_\_  
POSKOJ NEGERI \_\_\_\_\_  
NO. ANGGOTA \_\_\_\_\_  
NO. PF \_\_\_\_\_  
JAWATAN & GRED \_\_\_\_\_  
ALAMAT PEJABAT (Tempat Bertugas) \_\_\_\_\_  
POSKOJ \_\_\_\_\_  
NO. TEL/FAX \_\_\_\_\_  
NO. TEL BIMBIT \_\_\_\_\_  
NO. TEL RUMAH \_\_\_\_\_  
GAJI BULANAN RM \_\_\_\_\_

JANTINA:  LELAKI  PEREMPUAN  
AGAMA:  ISLAM  LAIN-LAIN Nyatakan  
BANGSA:  MELAYU  LAIN-LAIN Nyatakan

BIL HUBUNGAN NAMA NO. K/P @ NO. SRT BERANAK

\* SILA BUAT LAMPIRAN JHA PUJUAN YANG DISEDIAKAN JIKA MENCIRI

JIKA DI TERIMA SEBAIKAH ANGGOTA, SAYA BERSETUJU MEMBAYAR YURAN DAN SUMBANGAN BULANAN SEPERTI DI BAWAH :

BIL	PERKARA	RM
1	FEES MASUK	
2	MODAH SYER *	
3	MODAL YURAN	
4	WANG DEPOSIT ANGGOTA	
5	SUMBANGAN TABUNG KEBAJIKAN (AL-ABRAR)	
6	SIMPANAN TETAP	
7	LAIN-LAIN	

\* MODAL SYER ADALAH SUMBANGAN RM 300.00 DAN TOOK MELLEH IUT ZAKARADA MODAL SYER KOPERASI DAN HENDAKUAN DIELAKUAKAN DALAM TEMPOH 8 BULAN DARI TARikh KELULUSAN MENJADI ANGGOTA.

### 3.2.2 Member Financing Application Form

When a member of KADA desires to request a loan, they need to submit their application via the member financing application form. The application form will record the details of members that want to make a request for loan and then be reviewed by the employer for approval. The office records the application date and the existing loan amount contributed by the applicant.

 <p>KOPERASI KAITANGAN KADA KELANTAN BERHAD KOPERASI KAITANGAN KADA KELANTAN BERHAD</p>		<p>Borang XXXX D2/00</p>																																																													
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AMAUIN DIPOHON	RM _____ + _____	TEMPOH PEMBIAYAAN	RM _____ BUJAN ANSURAN BULAN RM _____ + _____																																																												
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NAMA NO. KP TARIKH LAHIR ALAMAT RUMAH	UMUR	JANTINA	<input type="checkbox"/> LELAKI <input type="checkbox"/> PEREMPUAN																																																												
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NO. TEL BIMBIT	0 4 4 2 2 4 2																																																														
<p><b>PENGESAHAN PEMOHON</b></p> <p>Saya _____ No. K/P: _____ dengan ini memberi kuasa kepada KOPERASI KAITANGAN KADA KELANTAN BHD atau wakilnya yang sah untuk mendapat apa-apa maklumat yang perlu dan juga mendapatkan bantuan balik dari pengeluar gaji dan emolumen saya sebagaimana amanah yang dijanjikan. Saya juga bersetuju menerima setiap keputusan dari KOPFASO ini untuk mendak permoohon tanpa memberi sebarang alasan.</p>																																																															
<p>Tandatangan _____ Tarikh: _____</p>																																																															
<p><b>BUTIR-BUTIR PEMBIAYAAN</b></p> <table border="1"> <tr> <td colspan="2">PENAMIN 1</td> <td colspan="2">PENAMIN 2</td> </tr> <tr> <td>NAMA</td> <td>NO. KP</td> <td>NAMA</td> <td>NO. KP</td> </tr> <tr> <td>NO. ANGGOTA</td> <td>NO. PF</td> <td>NO. ANGGOTA</td> <td>NO. PF</td> </tr> <tr> <td colspan="4">           Adalah dengan ini saya/kami dengan reka hati bersatu bersama-sama atau bersama bertanggungjawab sepenuhnya ke atas ansurans harga barang atau pembelian ini. Kami berjanji akan membayar balik kesemua ansurans hutang yang diberikan kepada peminjam/jan di atas jika sekiranya beliau tidak dapat membayar balik ansurans itu mengikut perjanjian yang telah dipersejuaui.         </td> </tr> <tr> <td colspan="2"> <input type="checkbox"/>            Tandatangan Penjamin 1            Tarikh: _____            No.K/P: _____            No. Telefon: _____         </td> <td colspan="2"> <input type="checkbox"/>            SAKSI 1            Tarikh: _____            No.K/P: _____            No. Telefon: _____         </td> </tr> <tr> <td colspan="2"> <input type="checkbox"/>            Tandatangan Penjamin 2            Tarikh: _____            No.K/P: _____            No. Telefon: _____         </td> <td colspan="2"> <input type="checkbox"/>            SAKSI 2            Tarikh: _____            No.K/P: _____            No. Telefon: _____         </td> </tr> <tr> <td colspan="4"> <p><b>PENGESAHAN MAIKAN</b></p> <p>Kami mengesahkan bahawa:</p> <p>No. K/P: _____            telah memberikan butir-butir perbaidi dan maklumat pendapatan selaras dengan rekod pekerjaan kaitangan tersebut.</p> <p>Kami juga mengesahkan bahawa takrifang adalah bergantian tetap.</p> <p>Gaji pokok sebuah RM _____ : _____            Gaji bersih sebuah RM _____ : _____            Tandatangan Sah/Cop _____            Tarikh: _____</p> </td> </tr> <tr> <td colspan="4"> <p><b>KECILAHAN PEBERAT</b></p> <table border="1"> <tr> <td colspan="2">Tarikh Permohonan diterima _____ / _____ / _____</td> <td colspan="2">Bil. 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### 3.2.3 Financial Statement Verification

The financial statement of KADA summarises the member's share information and loan information, allowing members to clearly view their current financial statements. At the bottom of this form, members need to verify the accuracy of their financial status and sign to confirm that the financial statement is accurate.

 <p>KOPERASI KAITANGAN KADA KELANTAN BERHAD</p>		<p><b>NAMA:</b> MOHD ROSLAN B ISMAIL <b>NO. K/P:</b> 740807-03-5479    <b>NO. PF:</b> 2273    <b>NO. AHLI:</b> 1579</p>							
<p>Tuan/Puan, PENGESAHAN PENYATA KEWANGAN AHLI KOPERASI KAITANGAN KADA KELANTAN BERHAD BAGI TAHUN BERAKHIR 30 JUN 2023.</p>									
<p>Untuk penentuan Juruaudit, kami dengan ini menyatakan bagi akaun tuan/puan adalah sebagaimana berikut:</p>									
<p><b>MAKLUMAT SAHAM AHLI:</b></p> <table border="1"> <tr> <td>Modah Syer: RM _____</td> <td>Modal Yuran: RM _____</td> <td>Simpanan Tetap: RM _____</td> <td>Tabung Anggota: RM _____</td> <td>Simpanan Anggota: RM _____</td> </tr> </table>				Modah Syer: RM _____	Modal Yuran: RM _____	Simpanan Tetap: RM _____	Tabung Anggota: RM _____	Simpanan Anggota: RM _____	
Modah Syer: RM _____	Modal Yuran: RM _____	Simpanan Tetap: RM _____	Tabung Anggota: RM _____	Simpanan Anggota: RM _____					
<p><b>MAKLUMAT PINJAMAN AHLI:</b></p> <table border="1"> <tr> <td>Al-Bai: RM0.00</td> <td>Al-Inah: RM0.00</td> <td>B/Pulu Kenderaan: RM0.00</td> <td>Road Tax&amp; Insuran: RM0.00</td> <td>Khas: RM0.00</td> <td>Al-Qadrul Hassan: RM0.00</td> </tr> </table>				Al-Bai: RM0.00	Al-Inah: RM0.00	B/Pulu Kenderaan: RM0.00	Road Tax& Insuran: RM0.00	Khas: RM0.00	Al-Qadrul Hassan: RM0.00
Al-Bai: RM0.00	Al-Inah: RM0.00	B/Pulu Kenderaan: RM0.00	Road Tax& Insuran: RM0.00	Khas: RM0.00	Al-Qadrul Hassan: RM0.00				
<p><b>PENGESAHAN BAGI PENYATA KEWANGAN</b> AHLI KOPERASI KAITANGAN KADA KELANTAN BERHAD BAGI TAHUN BERAKHIR 30 JUN 2023</p>									
<p>Saya ..... No. Ahli: ..... mengesahkan bahwa Penyata Kewangan Koperasi Kaitangan Kada Kelantan Berhad bagi tahun berakhir 30 Jun 2023 adalah benar:</p>									
Tandatangan: ..... Tarikh: ..... Nota: 1. Sila tandakan (/) di salah satu kotak datas. 2. Sekiranya pihak Koperasi tidak menerima sebarang maklumbalas daripada tuan/puan sehingga 30 Jun 2023, maka pengesahan penyata ini dianggap betul dan tuan/puan bersetuju.		<input type="checkbox"/> Setuju <input type="checkbox"/> Tidak Setuju..... (Nyatakan sebaliknya)							

## **4.0 Problem Statement**

Based on the information that we gather above, below are the problems that we identified.

### **1. Offline registration require user presence**

The current system used by KADA company is entirely manual, necessitating in-person presence for any registration or application processes. For instance, a new user that wants to register for membership or an existing member that wants to apply for a loan, need to visit the company. The process includes queuing, form taking, manually filling all the information and submitting the form. If any conditions are not met, such as registering after hours, the process cannot be completed.

### **2. Prone to unauthorised access**

Paper based documents are highly vulnerable to unauthorised access. The document is not protected by any form of security measure, and there are no records of who accesses them. Important data, including users' personal information, confidential documents, and company reports, are kept as physical copies, exposing them to the risk of physical espionage. Without proper protection, confidential information can be easily accessed by unauthorised individuals.

### **3. Risk of data loss**

The manual process of registration involves collecting, transporting, manually verifying and storing the physical copy of data. This exposes the documents to several risks, such as physical damages, theft, loss or deterioration over time. The failure to retain required records can lead to violation of legal and regulatory obligations, thus resulting in fine and penalty. The physical nature of the records makes the data vulnerable to various forms of damages.

### **4. Unable to generate report**

The existing system KADA company uses is unable to automatically generate a comprehensive report. This increases the workload of administrative staff, who are required to manually review each registration form and necessary documentation. Since the data recorded in manual registration form cannot be compiled automatically thus, a staff must count data manually in order to create reports for general viewing of all the data such as monthly and yearly reports. This process is time consuming and prone to errors.

### **5. The inability to calculate gain and loss of company**

The existing manual system used by KADA company hinders their ability to automatically calculate its gains and losses. Without an automated system to combine, process and analyse financial data, the financial performances of the company could not be tracked efficiently. This limitation makes it difficult for the evaluation of the company's overall financial situation.

## **5.0 Proposed Solutions**

With the acknowledgement of the existing problem that lies within the current system, the solution is to create an online system to modernise the process of membership registration and loan application for all users, by addressing the needs of various stakeholders, including new users, administrators, loan applicants and board managers.

### **5.1 Technical Feasibility**

The transition from a traditional manual system to an online system requires a certain amount of technical support. A secure server, database and suitable web development frameworks is essential to implement different functionalities into the system. Software used to design the user interface such as Figma, Freeform to draw Data Flow Diagrams. The system shall offer convenient access for users, automate data collection for administrators, and a role-based permission for different management levels. KADA online systems are designed as a more secure and sustainable solution to the problem. Records of member registration and any form of operation are to be logged and kept as archive in the database as a record that will not be lost over time. Permissions are given to different roles in the management, hence the important data and information is private. Moreover, user activities while using this system can be tracked, preventing crime such as information theft from happening. In the long term, the system can be updated through maintenance to fix bugs, enhance cyber security or increase functionality to further match with the user requirement. Overall, the system proposed is technically viable.

### **5.2 Operational Feasibility**

The KADA online system has a strong operational feasibility, given the readiness of users, stakeholders and the alignment with the current capabilities. Convenience is given to several roles involved with the operation. New users who want to register for membership, or existing users who want to apply for a loan needless to travel around to be physically present in the company to do so. Instead, any form of operation is available a few clicks away in a comprehensive online application form that collects all the necessary data, including documentation that could be uploaded in various formats. With the enterprise commerce architecture implemented, the system could run 24 hours, allowing users to access it anytime even off hours. Monthly and yearly reports can be generated automatically, effectively taking off work load from administrative workers compared to manual calculations and creation of reports. The gain and loss of the company could also be conveniently calculated and reported for the board meeting.

## 6.0 Objectives

In order to develop the system, below are the objectives that need to be achieved.

1. To identify the exact scope and coverage of the project, as well as the functionalities that are needed to include in the system by performing analysis on the current system.
2. To plan time and resources allocated for each task that are possibly needed to design and create the solution.
3. To analyse and identify user and system requirements in detail.
4. To identify the flow and operations of each process involved in the system and draw a Data Flow Diagram.
5. Design a system that can fulfil the user requirement and solve the problem of the existing system.

## 7.0 Scope of the Project

This system is a **web-based system and accessible via popular browsers** like Chrome, Firefox, Safari, and Edge on desktop and laptop computers. Besides, it also **allows smartphone and tablet users to access it** with a responsive design that adapts to various screen sizes. There will be four different user groups in our system: administrators, board directors, members, and new users. Each of them can execute certain tasks within the system, with limitations defining what can and cannot be done. These restrictions define the scope and boundaries of the system, as well as its functionalities and exclusions.

First, from the view of **new users**, they are **allowed to create an account**, which is necessary to access this system. New users will **fill out a registration form** with personal information, including their name, email address, phone number and password. After the account is approved by the board directors, they will **receive an email or a message** and the **system will create an account for the user**, enabling them to log in and use the system. These features are designed to make the onboarding process smooth and user friendly, ensuring that new users can quickly become part of the system and utilise its full range of features.

From the viewpoint of **members**, they can **make payments for their shares** directly through the system. Upon successful payment, members receive a confirmation and the details of their shareholding are updated in their profile. Then, they **can track dividends earned** from their shares, including payment dates and amounts. Beside that, members **can also apply for a loan** by filling out the online loan application form within the system. The required information may include types of loan, loan amount, income details, and employment information. Hence, members can upload necessary documents directly through the system. This may include proof of income, identification documents, and any other required paperwork. If the loan is approved,

members receive an approval notification through the email, including the terms and conditions of the loan.

From the **board directors**, they have the **authority to approve or reject the applications** submitted by members. This system provides board directors with a **dashboard where they can review pending applications** and use it during the meeting session. The decision will be recorded in this system and will notify the applicant for the outcome. Approved applications proceed to the next step, while rejected applications may be sent back with feedback or reasons for rejection. Moreover, board directors can **access financial reports** where they can access the statements, including balance sheets, income statements and cash flow statements.

Last but not least, administrators have access to this system to modify member, member application, and loan application data. For example, administrators have access to comprehensive profiles of all members. This includes personal data, membership status, and history records. Administrators can use this to **update the information that members can request to be changed** for a variety of reasons, like changing their name or address.

To sum up, this system allows the following four user groups: administrators, board directors, members, and new users. New users can create accounts and have access to the system once approved. By supplying the required data and supporting documentation, members can apply for loans, manage their shares, and keep track of dividends. Board directors have access to financial records and evaluate, approve, or reject member applications. Administrators can update and modify loan information, application data, and member data to make sure correct and current records. This structured approach ensures smooth onboarding, efficient application processing, and comprehensive data management.

## 8.0 Project Planning

### 8.1 Human Resource

This project would require various skill sets such as system analysis, project planning, project management, system designing, system development, system testing and maintenance. Our team comprises 5 members and along the journey, we would be learning and honing these skills.

Since all the members have different skill levels, there would be **continuous learning and skill development** among team members to enhance capabilities and adapt to evolving project requirements. Besides, **flexibility in roles and responsibilities** would be maintained to allow for dynamic task assignments based on project needs and individual strengths.

Even though the team is small, **communication is paramount to facilitate collaboration and information sharing** among team members. The team would have a WhatsApp group for

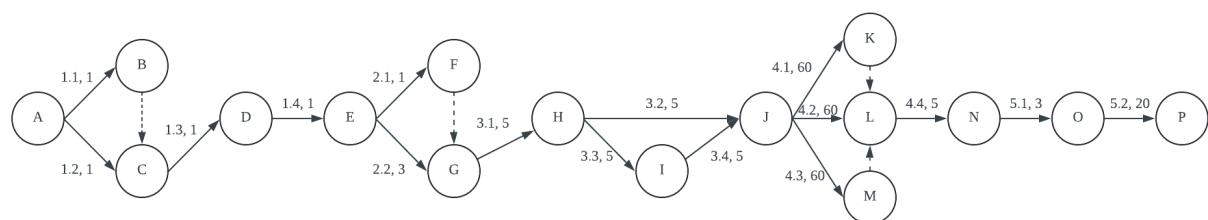
general communication and a GitHub repository ([TechHigh5](#)) for the team progress. Besides, **regular meetings** would be held for updates and to ensure each member has the same direction.

Roles	Description	Person in Charge
Project manager	<ul style="list-style-type: none"> <li>• Ensure everything runs smoothly and adhere to schedule</li> <li>• Develop plans outlining tasks, resources, timelines, and deliverables</li> <li>• Lead project team, assigning tasks, resolving conflicts, and leading team meetings</li> </ul>	Tan Yi Ya ( <a href="#">Bomi3002</a> )
System analyst	<ul style="list-style-type: none"> <li>• Evaluate KADA's current system</li> <li>• Build plans to improve the system's weaknesses or errors</li> <li>• Understand and identify areas for improvements</li> <li>• Draft new requirements and updates for the systems</li> </ul>	Chua Jia Lin ( <a href="#">Chua Jia Lin</a> )
System designer	<ul style="list-style-type: none"> <li>• Design new system or enhance the existing system</li> <li>• Creates a plan for the architecture of the system</li> <li>• Establish guidelines for programmers to help them understand the system implementation</li> </ul>	Goe Jie Ying ( <a href="#">jygoe</a> )
System developer	<ul style="list-style-type: none"> <li>• Design, develop and modify the software systems</li> <li>• Write and modify code, conduct testing and debugging</li> </ul>	Lam Yoke Yu ( <a href="#">Yuylam</a> )
System testing	<ul style="list-style-type: none"> <li>• Review software requirements and prepare test scenarios</li> <li>• Execute tests on software usability</li> <li>• Analyse test results for database impacts, errors or bugs, and usability issues</li> <li>• Participate in design reviews and offer input on requirements, product design, and potential problems.</li> </ul>	Teh Ru Qian ( <a href="#">TehRuQian</a> )

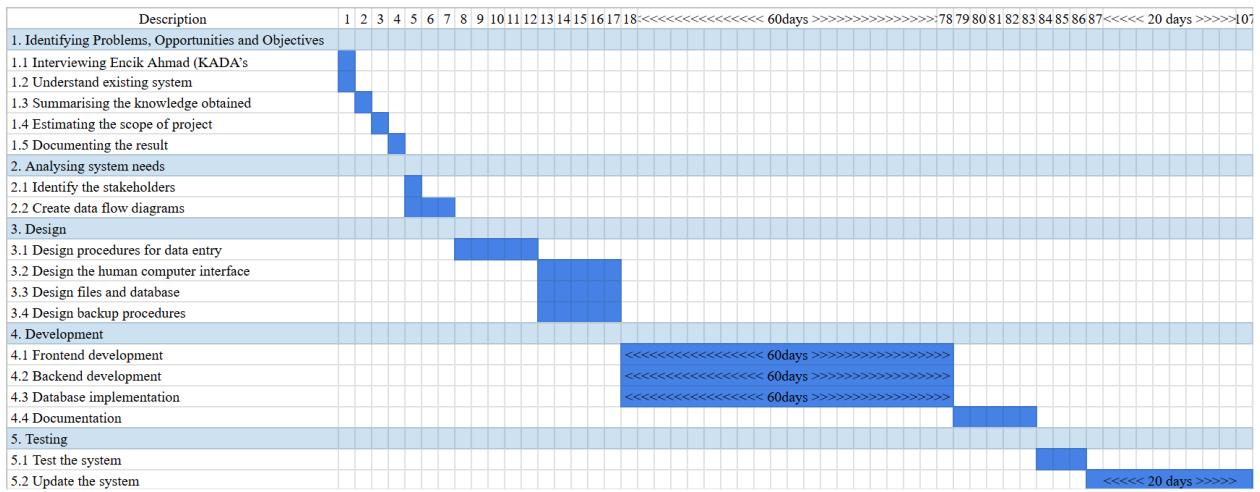
## 8.2 Work Breakdown Structure (WBS)

Description	Precedence	Time (days)
1. Identifying Problems, Opportunities and Objectives <ul style="list-style-type: none"> <li>1.1. Interviewing Encik Ahmad (KADA's Representative)</li> <li>1.2. Understand existing system</li> <li>1.3. Summarising the knowledge obtained</li> <li>1.4. Estimating the scope of project</li> <li>1.5. Documenting the result</li> </ul>	0 0 1.1, 1.2 1.3 1.4	1 1 1 1 1
2. Analysing system needs <ul style="list-style-type: none"> <li>2.1. Identify the stakeholders</li> <li>2.2. Create data flow diagrams</li> </ul>	1.4 1.4	1 3
3. Design <ul style="list-style-type: none"> <li>3.1. Design procedures for data entry</li> <li>3.2. Design the human computer interface</li> <li>3.3. Design files and database</li> <li>3.4. Design backup procedures</li> </ul>	2.1, 2.2 3.1 3.1 3.3	5 5 5 5
4. Development <ul style="list-style-type: none"> <li>4.1. Frontend development</li> <li>4.2. Backend development</li> <li>4.3. Database implementation</li> <li>4.4. Documentation</li> </ul>	3.2, 3.4 3.2, 3.4 3.2, 3.4 4.1, 4.2, 4.3	60 60 60 5
5. Testing <ul style="list-style-type: none"> <li>5.1. Test the system</li> <li>5.2. Update the system</li> </ul>	4.4 5.1	3 20

## 8.3 PERT Chart (based on WBS)



## 8.4 Gantt Chart



## 9.0 Requirement Analysis

### 9.1 Current Business Process

One day, a potential member went to KADA to register himself as a member of KADA. He fills in the member registration form with his personal information such as name, identification card number, address, monthly salary, and position. After submitting the member registration form, the approval of becoming a member will be discussed at a board meeting by the board directors. After the discussion ends, the applicant will receive a call informing whether his applicant is being approved. If the applicant is approved to become a member of KADA, the member's information will be stored in the database.

After becoming a member of KADA, RM55 will be deducted monthly automatically from the salary of the member and saved into the member's savings (Simpanan Tetap) and the welfare savings (Tabung Anggota).

If the member wants to apply for a loan, he needs to fill in the member financing application form, find two guarantors, and get the endorsement of his company. Then, the application will be discussed at the board meeting and he will be informed the status of the application through a phone call. After the loan is being approved, the member's salary will be deducted monthly to repay the loan according to the loan repayment table.

JADUAL PEMBAYARAN BALIK PEMBIAYAAN SKIM AL-BAI'UBITHAMAN AAJIL/BAI AL-INAH						
KADAR KEUNTUNGAN	4.20%					
TEMPOH (TAHUN)	1	2	3	4	5	6
TEMPOH (BULANAN)	12	24	36	48	60	72
JUMLAH PEMBIAYAAN	ANSURAN BULANAN					
1,000.00	86.83	45.17	31.28	24.33	20.17	17.39
2,000.00	173.67	90.33	62.56	48.67	40.33	34.78
3,000.00	260.50	135.50	93.83	73.00	60.50	52.17
4,000.00	347.33	180.67	125.11	97.33	80.67	69.56
5,000.00	434.17	225.83	156.39	121.67	100.83	86.94
6,000.00	521.00	271.00	187.67	146.00	121.00	104.33
7,000.00	607.83	316.17	218.94	170.33	141.17	121.72
8,000.00	694.67	361.33	250.22	194.67	161.33	139.11
9,000.00	781.50	406.50	281.50	219.00	181.50	156.50
10,000.00	868.33	451.67	312.78	243.33	201.67	173.89
11,000.00	955.17	496.83	344.06	267.67	221.83	191.28
12,000.00	1042.00	542.00	375.33	292.00	242.00	208.67
13,000.00	1128.83	587.17	406.61	316.33	262.17	226.06
14,000.00	1215.67	632.33	437.89	340.67	282.33	243.44
15,000.00	1302.50	677.50	469.17	365.00	302.50	260.83
16,000.00	1389.33	722.67	500.44	389.33	322.67	278.22
17,000.00	1476.17	767.83	531.72	413.67	342.83	295.61
18,000.00	1563.00	813.00	563.00	438.00	363.00	313.00
19,000.00	1649.83	858.17	594.28	462.33	383.17	275.06
20,000.00	1736.67	903.33	625.56	486.67	403.33	347.78

Dikemaskini 10 Mei 2023  
Mesyuarat Lembaga bil 3/2023 7 Mei 2023

Workflow:

1. Member registration
2. Store member application information
3. Member application approval
4. Store member information
5. Phone call about member application approval result
6. Saving processes (deduction from salary)
7. Loan application
8. Store loan application information
9. Loan application approval
10. Phone call about loan application approval result
11. Store loan information
12. Loan payment (deduction from salary)

## **9.2 Functional Requirement (input, process and output)**

Below are the functional requirements for the KADA Manual System:

- New users fill in the member registration form to register for membership and the member application information is stored.
- New user's personal information is required to approve their member registration application and the result will be informed through phone call after the monthly board meeting and the member information will be stored.
- Funds information is needed for the process of depositing into modal and the account information will be stored.
- Members fill in the member financing application form to apply for a loan and the loan application information will be kept.
- Loan application information is required to approve their loan application and the result will be informed through phone call after the monthly board meeting and the loan information will be stored.
- Loan information is needed for calculating the monthly loan repayment amount and the amount will be deducted from the member's salary.

### **9.3 Non-functional Requirement (performance and control)**

Below are the non functional requirements for the KADA Manual System:

Performance:

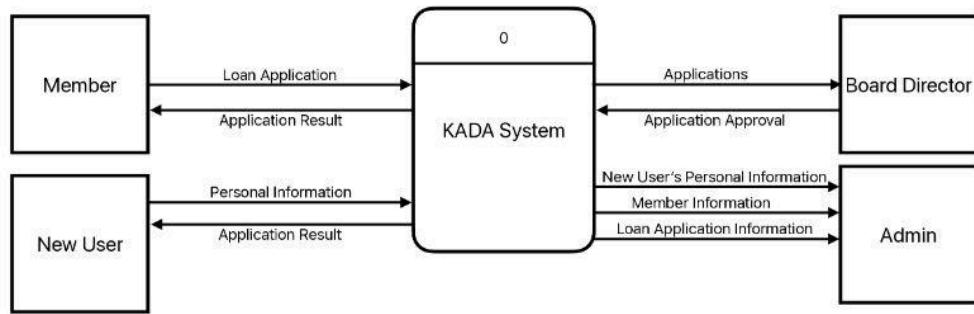
- Ensure all data filled in by new users and members are true and no missing parts.
- Complete storage task instantly to prevent the loss of information.
- Ensure the calculating process for repayment of loan is accurate and reliable.
- Inform new users and members about the result of their application through a phone call immediately after the board meeting.

Control:

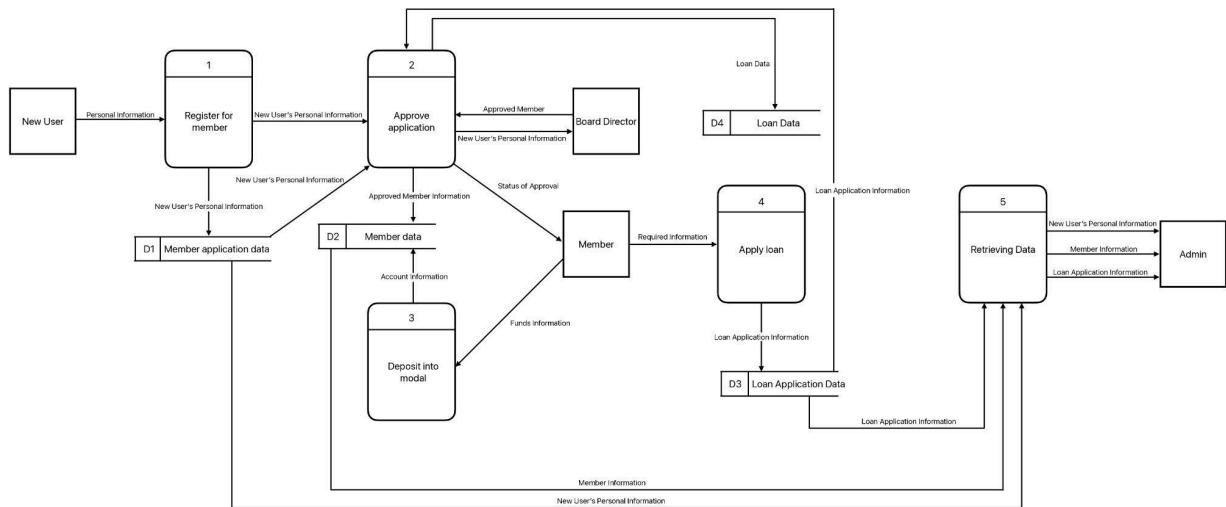
- Store all documents, member information, and loan information in a secure location such as a locked cabinet where only authorised workers hold the key to prevent unauthorised use of confidential information.
- Prepare backup for documents and keep them at different locations to prevent loss of information due to natural disasters.
- Make sure the documents are stored in a neat arrangement so that retrieval and tracing of documents can be done easily and rapidly.

## 9.4 Logical DFD AS-IS system

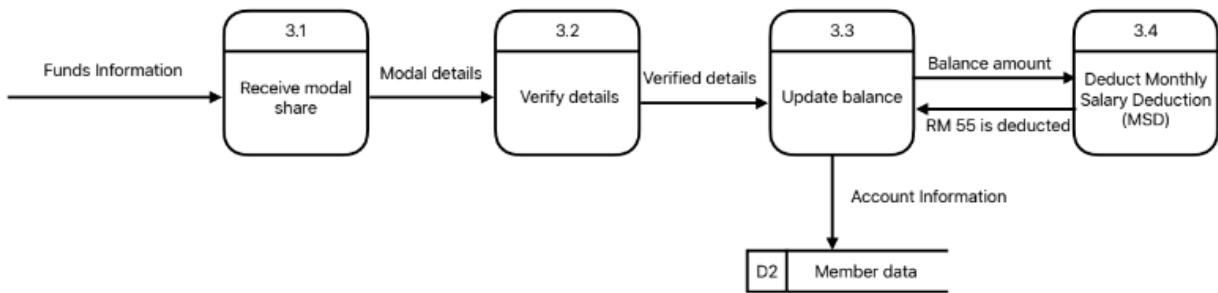
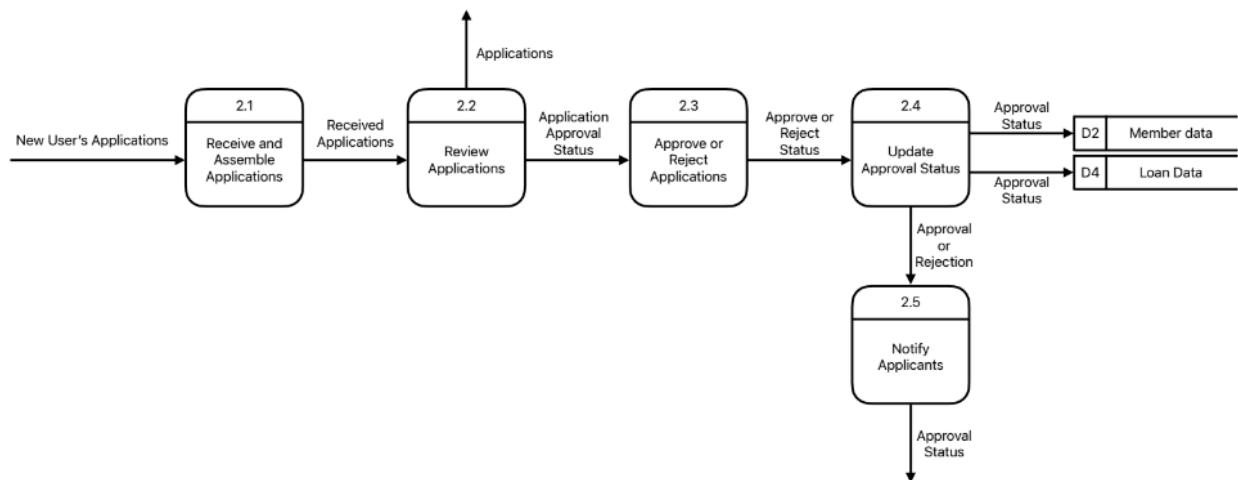
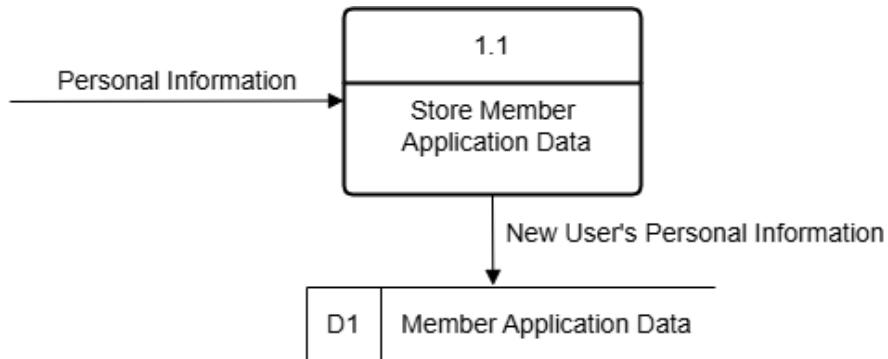
### 9.4.1 Context Diagram

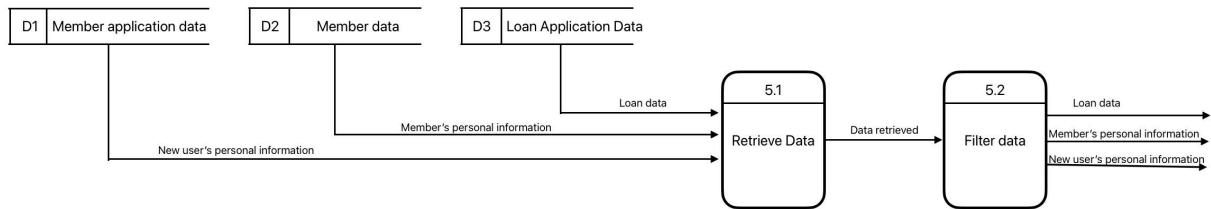
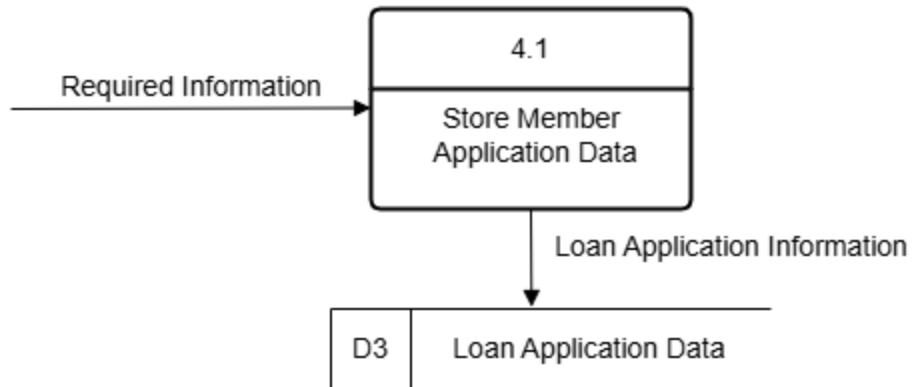


### 9.4.2 Diagram 0



### 9.4.3 Child Diagram





## **10.0 Benefit and Overall Summary of Proposed System**

Our proposed system addresses the efficient systems to manage their operations and interactions by providing specific features for new users, members, board directors and administrators. This system **streamlines processes, improves communication, ensures accurate data management and makes operations more efficient.**

First of all, this system **simplifies and automates a variety of tasks** for all user groups. For instance, it **can shorten the time required for new users to become active members** by enabling them to immediately register via an online system. In addition, **members may simply manage their financial activities**, such as purchasing shares and applying for loans, through a user-friendly interface. After this, **board directors can systematically evaluate and approve applications using a dedicated dashboard**, which speeds up the decision-making process. **Administrators can easily update application and member data** in the meantime, ensuring that records are always correct and up to date. Due to this automation, workflows are sped up and less manual work is required, increasing system efficiency.

In addition, the system **improves communication by providing users automated updates and notifications**. Upon account approval, **new users receive confirmation emails** that update them on their registration status. **Members receive notifications about their financial transactions**, such as share purchases and loan approvals, so they are always in touch with their account activities. **Administrators and board directors have the ability to leave comments and notes on applications**, which are directly shared with the relevant users. This minimises misconceptions and delays by ensuring that everyone is informed in real-time.

Furthermore, this system can **ensure accurate data management** by allowing administrators access to and control over member profiles, application data, and loan information. As a result, all data is verified and always be current and accurate. This accuracy is crucial for making informed decisions and maintaining trust in the system. Furthermore, **frequent updates and organised data storage help to avoid errors and discrepancies**, ensuring that all users have access to accurate information.

Overall, our proposed system will **transform KADA's manual procedures into a productive and user-friendly digital system**. Online loan applications and membership registration will boost operational speed, accuracy, and efficiency. Besides, members will benefit from a simple application procedure that includes real-time updates. A centralised database will save money by eliminating the need for paper forms and human labour and enhancing data management and security. Meanwhile, detailed reporting and analytics will help make more informed decisions. In conclusion, this system helps KADA achieve its goals for success in the future while addressing current challenges.