Adventist University of Central Africa
P.O. Box 2461 Kigali, Rwanda | www.auca.ac.rw | info@auca.ac.rw

Faculty of Information Technology

Department of Networks and Communication Systems

`

STUDENTS' PROJECT PROPOSAL

Project Topic Name: Home Expenses Management System

DONE BY: MUTEZINKA Esperance

PART I

INTRODUCTION OF THE CURRENT SYSTEM ENVIRONMENT

Historical Background

Families have been a fundamental aspect of human society for thousands of years and have undergone a significant transformation throughout history. The concept of family has varied greatly depending on cultural, economic, and political factors. In ancient societies, families were typically extended, with multiple generations living together and sharing responsibilities. The family served as a means of survival, providing support in areas such as agriculture, childrearing, and defense.

In medieval Europe, the concept of the nuclear family emerged, consisting of a married couple and their children. This was a time of great change, as the feudal system gave way to a more centralized society, and the importance of family shifted towards the establishment of inheritance and the transfer of wealth and property. This change also saw an increased emphasis on the patriarchal structure of the family, with the father serving as the head of the household and having significant authority over its members.

The industrial revolution of the 18th and 19th centuries brought about further changes to the family structure. As people moved from rural areas to cities in search of work, the extended family was replaced by the nuclear family as the primary unit of society. The role of the family became increasingly centered on the emotional and social well-being of its members, rather than just providing for their basic needs.

In the 20th century, the concept of the family continued to evolve. The rise of the feminist movement and increased access to birth control and abortion brought about greater gender equality and a shift away from traditional gender roles within the family. The latter part of the century saw a rise in single-parent families and alternative family structures, including same-sex and blended families.

In conclusion, the historical background of families reveals a dynamic and ever-changing concept, shaped by cultural, economic, and political factors. From the extended families of ancient societies to the diverse and evolving families of today, the family remains a fundamental aspect of human society and continues to play a significant role in shaping our

lives and communities.

Mission

The mission of a family is to provide emotional and social support, nurture and raise children, and promote the well-being and happiness of its members. The family also plays a role in passing down cultural values and traditions, and in creating a sense of belonging and identity.

Vision

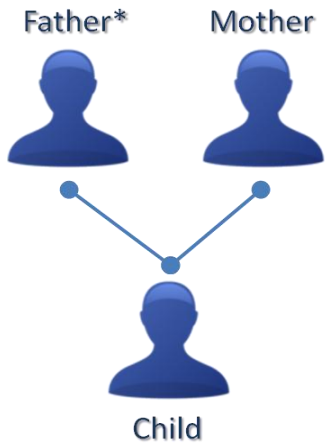
A vision for a family in an economic point of view is to achieve financial stability and security. This includes having sufficient income to meet the family's needs, saving for emergencies and future expenses, and investing in education and skills development to increase earning potential. It also involves managing debt and expenses wisely, and making smart financial decisions that support the family's long-term goals and aspirations.

Organizational Structure

The structure of a family is typically hierarchical, with the parents serving as the leaders and decision-makers. The family may also include grandparents, aunts, uncles, and cousins, forming an extended family structure. In this structure, the grandparents may hold a respected and influential role in decision-making, especially in traditional cultures.

Within the nuclear family, the parents hold the highest authority and are responsible for providing for the family, making decisions, and setting rules and expectations for children. Children are usually seen as the responsibility of the parents, but they can also contribute to the family structure by providing emotional support and helping with household tasks.

Organizational Structure of a Family.



PART II

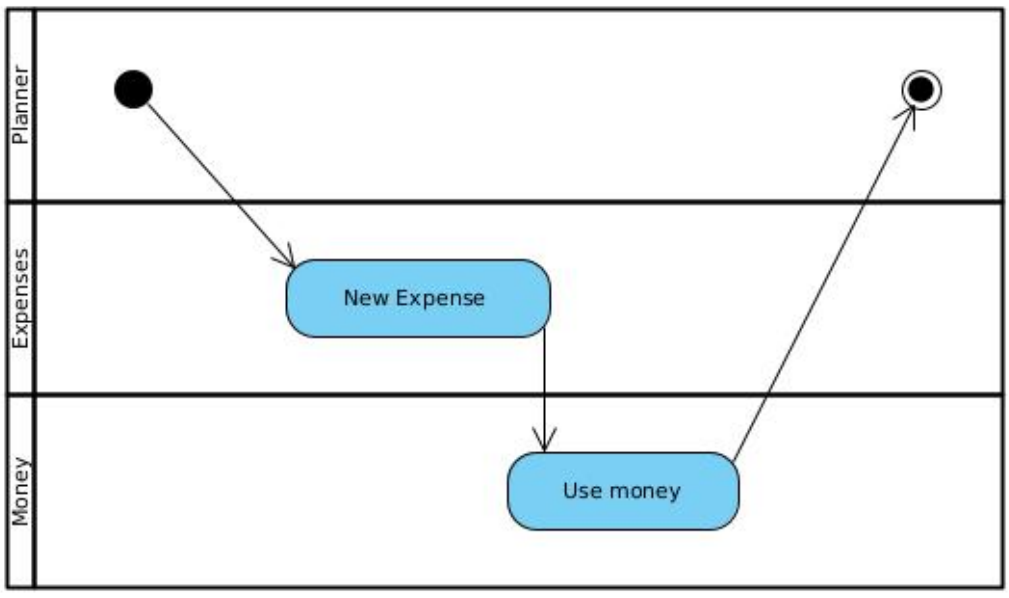
AS - IS - PROCESS MODEL

Description of the Current System

Many people manage their money currently without the use of budget planning applications by relying on basic financial management techniques. This may include tracking their income and expenses manually, creating spreadsheets or paper-based budgets, and setting savings goals. Some may also use cash envelopes or other physical methods to allocate money towards specific expenses. Additionally, people may limit their spending by avoiding unnecessary purchases, seeking out deals and discounts, and using coupons or other cost-saving methods. While these methods can be effective, they may require more effort and may not be as precise as using a budget planning application.

Modeling the Current System

As-is- process model diagram



PART III

PROBLEMS WITH THE CURRENT SYSTEM

Overspending: Without a budget planning app, families may struggle to track their spending and end up overspending, which can lead to debt and financial stress.

Lack of Financial Awareness: Without a budget planning app, families may not have a clear understanding of their financial situation, including their income, expenses, and debt. This can lead to poor financial decision-making and missed opportunities for savings and investment.

Difficulty with Goal-Setting: Without a budget planning app, families may have difficulty setting and achieving financial goals, such as saving for a down payment on a house or planning for retirement. This can lead to a lack of direction and purpose in their financial lives.

Strain on Family Relationships: Financial stress and disagreements can put a strain on family relationships. Without a budget planning app, family members may not have a clear understanding of each other's financial goals and priorities, which can lead to conflict and tension.

PART IV

TO-BE-PROCESS MODEL

Project Core Features

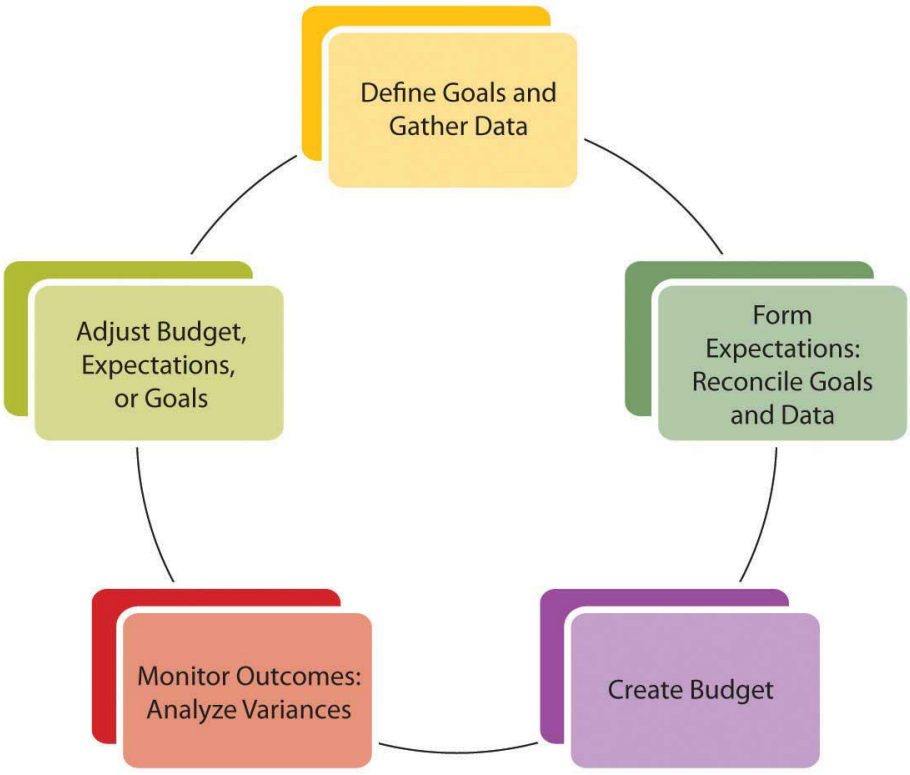
In general, these core features that will constitute the Home Expenses Management System

These features are as below:

- Expense Tracking: A budget planning app should allow users to track their expenses, either manually or automatically by syncing with bank accounts and credit cards.
- Budget Creation: Users should be able to create a budget that fits their financial situation, including setting spending limits and savings goals.
- Goal Tracking: A budget planning app should allow users to set financial goals, such as saving for a vacation or paying off debt, and track their progress towards achieving those goals.

Modeling the New Process

To-be-process model diagram



PART V

SYSTEM REQUIREMENTS

Functional Requirements

- The system shall allow users to input and categorize expenses.
- The system shall allow users to input and categorize income.
- The system shall allow users to create and manage a budget plan.
- The system shall allow users to set spending limits and track progress against goals.
- The system shall allow users to input and manage bill payments.
- The system shall allow users to set reminders for upcoming due dates.
- The system shall generate reports, graphs, and charts to analyze spending and income patterns.
- The system shall allow users to customize categories, labels, and budgets.
- The system shall sync across multiple devices and platforms.
- The system shall be accessible from anywhere with an internet connection.

Non-Functional Requirements

Non-functional requirements define the quality attributes, design and implementation constraints, and external interfaces which a system must have. This requirement category includes important behavioral properties that the system must have, such as performance and usability.

- **Usability**
  - The system must be easy to use for all users.
  - Users should be able to use the system without any guidelines or training.
  - The system should display house details like house photos very well and in good quality.

- **Security**
  - The user has to log in before registering a house in the system.
  - A User must log in before starting the process of discussing with the occupier of the house he/she wants to join.
  - The system must hash the user password.
  - The system should provide the right privileges according to user types.

- **Performance**
  - The system should be responsive to user input or any external interruption which is of the highest priority and return to the same state.
  - The system must not take more than 5 seconds to load requested data on a network of 200 Kilobytes per second.
  - The system must fetch and cache necessary information when loaded to make it easier for users to view important information like images easily.

- **Accessibility**
  - The system should be accessible on all laptops, tablets, and mobile devices.
  - The system should only be accessible to authorized users.
  - The system should be online for 24 hours over 7 days except when in maintenance.
  - In case the system is in the maintenance process, users should be notified or informed appropriately.

PART VI

TECHNOLOGY TO BE USED

Languages:

- **HTML:** With the context of a web page, HTML is written in the form of HTML components containing tags enclosed in angle brackets like signs. The most common pair of HTML tags are . The purpose of using HTML in that the browser reads the HTML text and converts them into visible or audible elements for web pages.
- **CSS**: (Cascading Style Sheets) and HTML (Hypertext Markup Language) are two of the most important technologies for building Web pages. For a range of devices, HTML provides the page structure and CSS offers the (graphic and auditory) layout.
- **JavaScript**: to provide interactivity in web pages. JavaScript is a text-based programming language that allows you to create collaborative web pages on both the client and server sides. Where HTML and CSS give web pages' structure and style, JavaScript gives web pages' interactive elements that interact with a handler.

Frameworks and Libraries:

- **ReactJS:** React is a free and open-source front-end JavaScript library for building user interfaces based on UI components. It is maintained by Meta and a community of individual developers and companies.
- **NodeJS:** Node.js is an open-source, cross-platform, back-end JavaScript runtime environment that runs on a JavaScript Engine and executes JavaScript code outside a web browser, which was designed to build scalable network applications**.**
- **ExpressJS:** Node.js is an open-source, cross-platform, back-end JavaScript runtime environment that runs on a JavaScript Engine and executes JavaScript code outside a web browser, which was designed to build scalable network applications.

Database Management System.

- **MongoDB:** MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas. MongoDB is developed by MongoDB Inc. and

licensed under the Server Side Public License which is deemed non-free by several distributions.

Tools:

- **MongoDB compass**: MongoDB Compass is a powerful GUI for querying, aggregating, and analyzing your MongoDB data in a visual environment.

PART VII

PROJECT PLAN AND SCHEDULE

S/N	ACTIVITIES	NOV	DEC	JAN	FEB	MAR	APRIL	MAY
1	Chapter 1							
2	Chapter 2							
3	Chapter 3							
4	Chapter 4 & 5							
5	Submit Book							