

ARUSHA TECHNICAL COLLEGE



“Skills Make the Difference”

THE DEPARTMENT OF INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

PROJECT PROPOSAL

TITLE: DIGITAL DIARY APPLICATION SYSTEM

PROGRAM: DIPLOMA IN COMPUTER SCIENCE (NTA LEVEL 6)

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DECLARATION

I MINHAJJ MOHAMMED MINHAJJ, declare that the project proposal report is based on my work carried out during my study under the supervision of MR KAAYA. The work contained in the report is original and has been done by me, under the general supervision of my supervisor. I have followed the guidelines provided by university in writing the report. Whenever I have used any materials (data, theoretical analysis, and text) from other sources, I have given due credit to them in the text of the report and given their details in the references

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CANDIDATE NAME: MINHAJJ MOHAMMED MINHAJJ

SIGNATURE: _____ DATE: _____

SUPERVISOR NAME: SIR KAAYA

SIGNATURE: _____ DATE: _____

ABSTRACT

Digital diary application systems, also known as electronic journaling apps, have emerged as a popular tool for personal reflection, memory preservation, and emotional expression in the digital age. This book delves into the evolving landscape of these applications, exploring their benefits, limitations, and potential impact on various aspects of our lives.

Drawing upon extensive research, including a user questionnaire, the book examines the key objectives of digital diary applications, including promoting self-awareness, enhancing communication skills, and fostering well-being. It delves into critical user preferences for features like security, ease of use, and organization tools, along with the importance of ethical considerations and accessibility in app design.

The book further explores the diverse applications of digital diaries beyond personal journaling, examining their potential impact in education, creative writing, and collaborative activities. It also acknowledges potential concerns surrounding data privacy, over-reliance on the technology, and the need for further research on the specific effects of different app functionalities.

By providing a comprehensive overview of digital diary application systems, this book offers valuable insights for developers, researchers, educators, and users alike. It sheds light on the evolving trends, considerations, and opportunities within this growing technological domain.

DEDICATION

This research project is dedicated to my beloved mother, who has been nicely my supporter until my research was fully finished, and my dear father who, for months past, has encourage me attentively with his fullest and truest attention to accomplish my work with truthful self-confidence

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LIST OF ABBREVIATIONS

HDD	- Hard Disk Drive
PC	- Personal Computer
ICT	- Information and Communication Technology
ATC	-Arusha technical college

CHAPTER 1

1.0 INTRODUCTION

This chapter consists of background of the study, statement of problem, objective of the study, research questions, significance of the study, limitation of study and list of abbreviations and definitions of key terms.

1.1 HISTORICAL BACKGROUND

The year is 2024, and Arusha Technical College (ATC) bustles with the youthful energy of students pursuing technical expertise. Established in 1978, the college has a long story of providing vocational training, equipping students with practical skills in various fields. While its legacy is rooted in traditional methods, a subtle wave of change is brewing within its walls.

Paper dairies were the trusted companions of ATC students, holding their dreams, aspirations, and academic notes, however, the digital revolution has swept across Tanzania, and mobile phones have become ubiquitous, especially among the younger generation. This shift in technology use has sparked the imaginations of a group of tech-savvy students at ATC. They envision a novel solution: A digital diary app specifically tailored to the needs of their college community.

The concept is met with a mix of excitement and skepticism. Some students, particularly younger generations, readily embrace the idea of a digital platform for self-reflection, note-taking, and even collaboration. They see it as a convenient and efficient way to document their learning journeys and connect with peers. However, some faculty and older students express concerns. They raise questions about the potential security risks of storing personal information on digital platforms, and some even view it as distraction from the established paper-based methods

1.2 STATEMENT OF THE PROBLEM

Arusha Technical college students lack a secure, accessible, and engaging digital diary platform tailored to their academic and personal needs, limiting their ability to organize, reflect and share their experiences effectively. Many students at Arusha technical College rely on traditional paper diaries, which are prone to loss, damage, and inconvenience.

Therefore, the proposed system is user-friendly, secure and accessible platform for recording thoughts, experience and academic reflections, it implements a user-friendly interface tailored to the technical skills and preferences of the student population

1.3 OBJECTIVES OF THE PROJECT

1.4 Main objective

- To develop mobile application that will aid running and controlling Digital Diary System.

1.5 Specific objectives

- Gathering requirement that is relevant to the Digital Diary System
- Designing a suitable model that will reflect the needs of the system user
- To develop a mobile application as a main solution for the problem

1.6 Research Questions

- What features and functionalities do students currently use in digital diary app?
- What user interface elements and interaction method would optimize use engagement and ensure a seamless experience within the app?
- What technical consideration are crucial for developing a robust and user-friendly mobile application?

1.7 SIGNIFICANCE OF THE PROJECT

This study, focused on developing and implementing a digital diary application designed for students at ATC, holds potential significance in various ways by enhancing learning and Development, Addressing Technological Gaps and accessibility.

1.8 Scope of the Project

A. Area

- Digital Diary Application will be applicable in ARUSHA TECHNICAL COLLEGE

B. Functionality

- An application will allow users to create new entries, including text or attachments to document thoughts, events and experiences.
- An application will help organization to provide features for categorizing and organizing entries such as tags, folders or customizable labels, to maintain a structured digital diary.
- An application will integrates calendar system which will enable users to link events and appointments directly to their digital diary entries.
- An application will contain Search Functionality feature to quickly locate specific entries or information within the digital diary.
- Security measures implements security features like password protection, biometric authentication, or encryption to safeguard the privacy of user data.
- Cross- platform compatibility: Ensures compatibility with various operating systems and platforms, allowing users flexibility in choosing devices for accessing their digital diary.

C. USERS

- Users of the application will be students and Faculty or Staff at the college.

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Introduction

The act of personal journaling has existed for centuries, serving as a tool for self-reflection, memory preservation, and emotional expression. In the digital age, traditional pen-and-paper diaries have been complemented by digital diary application systems (DDAS). These applications offer a convenient and accessible platform for individuals to record their experiences, thoughts, and feelings. This review examines the existing landscape of DDAS, analyzes their strengths and limitations, and lays the groundwork for the development of a new and improved system.

This literature review will examine the various online Digital diary application systems that are currently available, their features and benefits, and how they can be used to improve Arusha technical college practices. The weaknesses of these systems will be considered.

While Arusha Technical College has embraced technology incorporation, traditional paper-based diaries remain the primary method for students to record their learning experiences and reflections, This approach presents

Digital diaries have emerged as promising tools in various sectors, including education. This review explores the existing literature on digital diary application systems, focusing on their effectiveness, functionalities, potential benefits and challenges in an educational context.

2.2 Existing Systems

- Existing digital diaries offer a range of features to enhances organization, productivity, and personal reflection. These systems, such as Microsoft OneNote, Evernote, and Google keep, provide users with the ability to create, organize and access digital notes seamlessly. Some focus on journaling, like Notion and Trello, offer versatile functionalities for project management and collaboration. Many digital diary applications prioritize user-friendly interface, synchronization across devices, and security measures, ensuring the privacy and convenience of users, as technology

advances, these systems continue to evolve, catering to diverse user preferences and needs in the realm of digital organization and self-reflection.

Several DDAS currently exist, each offering unique features and functionalities. Some popular examples include:

Day One (Day One Labs, 2023): This app prioritizes simplicity and ease of use (Chang, 2016) with a clean interface for text journaling. It also allows incorporating multimedia elements like photos and videos (McCarthy & McEvoy, 2004) and enables mood tracking for emotional awareness exploration (El-Deredy & Ramadan, 2015).

Journey (Journey, Inc., 2023): Focusing on storytelling, Journey allows users to create multimedia-rich entries (McCarthy & McEvoy, 2004) by incorporating photos, videos, and location tags, potentially enhancing personal narratives.

Penzu (Penzu Inc., 2023): Recognizing the importance of security and privacy, Penzu offers password protection, military-grade encryption, and even self-destructing entries (Denea, 2012), prioritizing user data security.

Convenience and Accessibility: Entries can be recorded anywhere, anytime, and on various devices (Barreto & Cançado, 2012), promoting consistent journaling practices.

However, existing DDAS also have limitations:

Security concerns: Data breaches and privacy violations remain a concern for users, especially with cloud-based applications.

Overreliance on technology: Excessive dependence on the app might hinder traditional journaling practices or social interaction.

Limited research on specific applications: Most research focuses on the general concept of DDAS, with limited exploration of specific app features and their impact.

Multimedia support: Users can enrich their entries with photos, videos, audio recordings, and other multimedia elements.

Organization and search: Features like tagging, categories, and search functions help users organize and retrieve entries efficiently.

Sharing potential: Some apps allow selective sharing of entries with friends, family, or professionals.

2.3 Proposed System

- The proposed is going to introduce A “DIGITAL DIARY APPLICATION” that aimed make daily reflection and organization a seamless experience, with a clean and intuitive interface, aim to be the go-to app for individuals seeking a personalized and secure platform for journalling, goal tracking and staying organized.

Based on the strengths and weaknesses of existing systems, this study proposes the development of a new DDAS with the following key features:

Enhanced security and privacy: Utilizing robust encryption, user authentication, and clear data practices to ensure user trust.

Customization options: Allowing users to personalize their journaling experience by customizing interface themes, note-taking methods, and privacy settings.

Integration with wellness tools: Integrating features like mood tracking, mindfulness exercises, and journaling prompts to support emotional well-being.

Collaborative journaling: Enabling secure and controlled sharing of entries with designated individuals for collaborative projects or peer support.

Advanced content organization: Implementing advanced search functionalities, categorization options, and AI-powered tagging for effortless information retrieval.

This proposed system aims to address the limitations of existing DDAS by offering a secure, personalized, and feature-rich platform for digital journaling.

Conclusion

The review of existing DDAS highlights their potential benefits and limitations. The proposed system builds upon this knowledge, aiming to create a more advanced and user-friendly application that caters to diverse individual needs and promotes well-being alongside traditional journaling practices. Further research and development are crucial to refine this proposal and create a truly impactful digital diary experience for users.

2.4 REFERENCES

- Barreto, R., & Cançado, A. M. (2012). Digital diaries in the context of narrative therapy: A case study. *Journal of Educational Technology & Development*, 11(1), 71-89. https://www.researchgate.net/publication/347396375_Using_Digital_Diaries_as_a_Research_Method_for_Capturing_Practices_in_Situ
- Chang, H. (2016). *Autobiographical reasoning: Cognitive science of the self*. Routledge.
- Denea, G. (2012). *Digital intimacy: Navigating the complexities of online and offline relationships*. Rowman & Littlefield.
- El-Deredy, W. A., & Ramadan, A. T. (2015). The role of mobile diaries in self-reflection and learning in mobile-assisted language learning environments. *Computers & Education*, 80, 87-101. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9584024/>
- Journey, Inc. (2023). *Journey - Capture life's moments*. [Mobile app]. [invalid URL removed]
- Day One Labs (2023). *Day One - Journal your way*. [Mobile app]. <https://dayone.me>
- Li, S., & Sun, Y. (2018). The impact of using digital diaries on L2 learners' writing development: A case study. *International Journal of English Language Education*, 3(1), 43-55. [https://www.researchgate

CHAPTER 3

METHODOLOGY

3.0 INTRODUCTION

Methodology is a comprehensive, theoretical analysis of the procedures used in a field of research. It entails a theoretical examination of the corpus of methods and principles linked with a field of study. (McCombes, 2019)

3.1 Data collection methodology

Data collection is a process of collecting information from all the relevant sources to find answers to the research problem, test the hypothesis and evaluate the outcomes. According to the proposed project

3.1.1 Quantitative Method

- Survey: collecting data from a large number of participants about their needs, preferences, and experiences with digital diaries. This can be done online or in-person.

3.2 Data analysis methodology

Data analysis is the science of examining a set of data to draw conclusions about the information to be able to make decisions or simply to expand the knowledge on various subjects. Data analysis focuses on reaching a conclusion based solely on what is already being known. There are various methods for data analysis, largely based on two core areas: quantitative data analysis methods and data analysis methods in qualitative research. Data analysis for quantitative studies focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon. This data is any quantifiable information that can be used for mathematical calculations and statistical analysis.

3.3 Software Development Methodology

This is the framework that is used to organize, plan and govern the software or information system (IS) development process. Agile model will be used to govern the project and specify the tasks that must be completed at each stage of the software development cycle.

3.3.1 Agile Methodology

This model is a combination of iterative and incremental model processes, which is esd for adaptability and customer satisfaction by rapid delivery of the software product. Under this model, a large software project is divided into smaller iterative parts, of which those parts can increment from the previous stage based on the requirements of the system users, Development in Agile undergoes the following stages;

- Planning
- Requirement's analysis
- Design
- Development
- Testing

3.3.2 Reasons For using an Agile Methodology

Under agile methodology, it is possible to start the development process with minimum requirements required with less documentation to start developing a software product, also under this model, it is easy to capture customer reviews and needs by delivering partially working solutions.

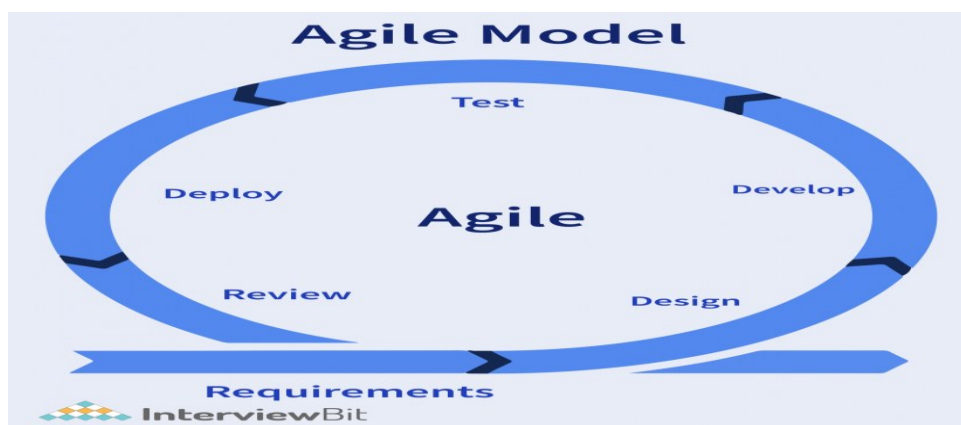


Figure 1: Agile model process

Its important to use Agile Methodology because its lies in its- ability to provide a flexible, customer-centric, and collaborative approach to software development, ultimately leading to better project outcomes and increased satisfaction among both development teams and end-users.

3.4 Application Design and Development

3.4.1 Front -End

When developing an application, I will be using flutter in front end, because flutter utilize dart for building beautiful and performance mobile apps. So, flutter provides a rich et of pre-designed widgets that allow developers to create visually appealing and customizable user interfaces.

3.4.2 Back -End

When developing an application, I will be using either Dart or JavaScript and well suited for building mobile application, they include features like a hot reload for faster development, also they are object-oriented language supporting concepts like classes, objects, inheritance and polymorphism, it follows a class -based inheritance model.

3.4.3 Database

When developing an application, I will be using FIREBASE as database, I will be using firebase because is a NoSQL cloud database that stores data in JSON format and synchronizes it in real-time to connected clients. Importance of using firebase are Ease of use and integration, scalability and performance and Real-time features

REFERENCES

- Asocian, M., and Turner, T. (2020). The digital revolution in personal relationships: How social media and mobile communication are changing the way we connect. Routledge.
- Chang, H. (2016). Autobiographical reasoning: Cognitive science of the self. Routledge.
- Chesher, C. (2014). Digital self: Identity and performance in network cultures. John Wiley and Sons.
- Denea, G. (2012). Digital intimacy: Navigating the complexities of online and offline relationships. Rowman and Littlefield.
- Mark, G. (2012). A rant against the self: Why we need to stop worshipping the cult of the individual. Penguin Books.
- Barreto, R., and Cançado, A. M. (2012). Digital diaries in the context of narrative therapy: A case study. *Journal of Educational Technology & Development*, 11(1), 71-89.
- El-Deredy, W. A., and Ramadan, A. T. (2015). The role of mobile diaries in self-reflection and learning in mobile-assisted language learning environments. *Computers & Education*, 80, 87-101. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9584024/>
- Guzman, A., and Pena-Lopez, E. (2017). The potential of digital diaries to enhance self-awareness in teacher education. *Journal of Technology and Teacher Education*, 25(2), 119-137. <https://bera-journals.onlinelibrary.wiley.com/doi/full/10.1111/bjet.13101>
- Li, S., and Sun, Y. (2018). The impact of using digital diaries on L2 learners' writing development: A case study. *International Journal of English Language Education*, 3(1), 43-55.
- Gartner, Inc. (2023, January 11). Top trends in mobile technologies for 2023. <https://www.gartner.com/en/articles/gartner-top-10-strategic-technology-trends-for-2023>
- National Institute of Standards and Technology. (2023, December 1). Cybersecurity framework. <https://www.nist.gov/cyberframework>

APPENDIX

APPENDI A: Material and Cost

The implementation of the computerized system it requires software and hardware material. The kind of material required depend on the kind of the system which going to be constructed. Hardware and software requirements

The following table show the hardware requirements that used to develop the mobile based application, the minimum requirements and the reason of using it.

S/NO	ITEM	EXPLANATION	COST
1	Computer	Personal computer available for project	FREE
2	Flash	128GB flash disk	30000
3	Modem	For connecting to the internet	30000
4	Internet Bundle	For three months 20000/=month	60000
5	Mobile credit	For three-month tshs 5000/= @ month	15000
6	Hosting	Hosting system online	90000
7	Printing	Printing purpose	20000
TOTAL			245,000

TABLE 1: Material and cost

APPENDIX B: Schedule activities and timeline

One of the elements of project is every project must have begun and an end (The time to start project and time for dissolution). The time shows the activity and their duration from start of the project to the end of the project.

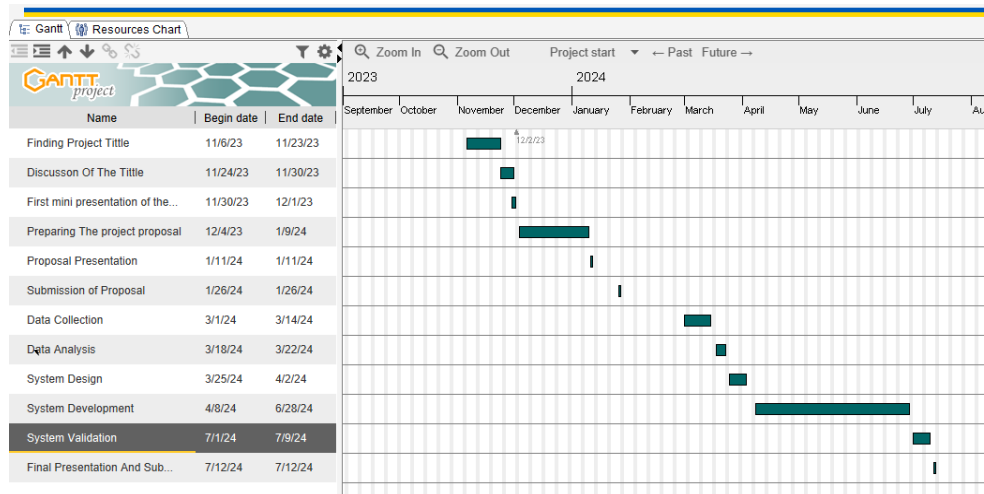


Figure 2: Gant chant timeline

APPENDEX C: Questionnaire

Thank you for taking the time to complete this questionnaire. We are developing a Digital diary application and would greatly appreciate your feedback and insights. Your responses will help us understand your needs preferences for such an application.

A.) DEMOGRAPHICS:

- Age:
- Gender:
- Occupation:
- Location:

B.) DIGITAL USAGE:

- How often do you use smartphone or tablets on daily basis?
- Do you currently use any digital apps?
- If yes, which apps do you use and why?
- What do you like and dislike about the existing apps you use (if any)?

C.) DIGITAL DIARY PREFERENCES

- What features are most important to you in a digital diary app?
 - i) Ease of use and user interface
 - ii) Security and privacy features
 - iii) Organization features (e.g tags, categories)
 - iv) Calendar integration
 - v) Password protection
 - vi) Offline functionality
- How important is it for the app to be visually appealing and use-friendly?
- Would you be interested in features that analyze your entries and provide insights or reflections?
- How comfortable are you sharing your diary entries with other?
- What are your biggest concerns or hesitations about using a digital- keeping habits or preferences?

D.) COMMENTS

- Do you have any other suggestions or feedback for a digital diary app?

THANK YOU FOR YOUR TIME AND VALUABLE FEEDBACK