

Reginah Ngabire

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MAKERERE UNIVERSITY BUSINESS SCHOOL

FACULTY OF COMPUTING AND INFORMATICS

DEVELOPMENT OF A TRAVEL AGENCY MANAGEMENT SYSTEM FOR KAKISE BUS COMPANY

By

Name	Registration Number	Phone Number
Ngabire Reginah	23/U/15854/EVE	0708183162
Mwesigwa Joel Kigaye	23/U/0925	0708942237
Kirabo Queen Esther	23/U/24679/PS	0741779673
Mugerwa Rosco	23/U/11562/EVE	0744657012
Ayor Laban Abel	23/07229/PS	0700537954

Supervised By:

Mr.: Makubuya Rogers

Department of Applied Computing and Information Technology

A Project Proposal Submitted to the Faculty Of Computing & Informatics of Makerere University Business School in Partial Fulfillment for the Award of the Degree of Bachelor of Business Computing of Makerere University.

NOVEMBER, 2025

DECLARATION

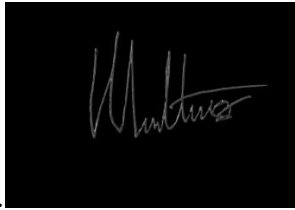
We, the undersigned, declare that to the best of our understanding and knowledge, this proposal is our original piece of work and have not been submitted for any academic award in this or any other institute.

Name	Registration Number	Signature
Ngabire Reginah	23/U/15854/EVE	
Mwesigwa Joel Kigaye	23/U/0925	
Kirabo Queen Esther	23/U/24679/PS	
Mugerwa Rosco	23/U/11562/EVE	
Ayor Laban Abel	23/07229/PS	

Date: **November, 23, 2025**

APPROVAL

This proposal has been submitted for examination with the approval of the supervisor.



Signature:
.....

Date:

Mr. Makubuya Rogers

TABLE OF CONTENTS

DECLARATION	i
APPROVAL	ii
SECTION ONE	1
INTRODUCTION	1
1.1 Background of the Project	1
1.2 Problem statement for Kakise Bus Company.	2
1.3: General objectives.....	3
1.3.1: Project Goal.	3
1.3.2: Project Objectives.	3
1.3.3: Project scope.	3
Time Scope	3
Geographical scope	3
Project deliverables	3
Key activities	4
Extent of work to be done.	4
1.4 Anticipated Significance of Project.	4
1.5 Project assumption.	4
SECTION TWO	6
LITERATURE REVIEW	6
2.1 Digital Transport Management Technologies	6
1.2 Bus Service Operations and Management	6
1.3 Companies Operating in Uganda.....	6
1.4 Travel Agency Management Systems	7
1.5 Travel Agency Management System Development Approach.....	7
1.6 Benefits of Travel Agency Management Systems.....	7
1.7 Challenges in Implementing Travel Agency Management Systems	9
1.8 Conclusion	9
SECTION THREE	10
3.1 Research methodology.....	10
3.1. Research Design/Approach.....	10

3.2 Project Organization Client.....	11
3.2.1 Project Owners.....	11
3.2.2 System users.....	11
3.2.3 Stakeholder Population	12
3.3 Sampling Technique	12
3.4 Sources of Project Data.....	13
3.4.1 Primary Data:	13
3.4.2 Secondary data	13
3.5 Data collection techniques	13
3.6 System Analysis and Design Approach.....	13
3.6.1 Requirement Elicitation	14
3.6.2 Design Techniques.....	14
3.7 Expected Project Limitations.....	14
3.9 Challenges in Accessing Advanced Development Tools	15
III. Limited Technical Skills	15
3.6 Ethical Consideration.....	15
3.7 Timeline and Milestone	16
3.8 Disclosure and declaration statement.....	16
REFERENCES	17

SECTION ONE

INTRODUCTION

1.1 Background of the Project

Transportation refers to the movement of people and goods from one place to another for various causes all over the world. It covers a vast area of activities starting from the various modes of movement like road, air, rail, and water transport to the operational system and technologies. At the global level, bus transport companies make significant contributions to the mobility network and provide essential services for both city-based and long-distance travel. The modern operators like Greyhound, Megabus, Flixbus, AAT kings, National express, and coach USA have incorporated advanced digital platforms which include mobile applications, E ticketing solution, real time trip monitoring and improved customer services like WIFI and onboard charging systems.

Within the East African countries, for example Uganda, Kenya, Tanzania, South Sudan, Rwanda, and Burundi, bus companies like Modern coast, Mash East Africa, and Tahmeed Coach, Global Buses, YY Coaches provide inter-country connectivity across Kenya, Uganda, Tanzania, and Rwanda. Most of the operators have VIP services with reclining seats, Wi-Fi, charging ports, and air conditioning. They have also adopted semi-digitized systems that facilitate online ticket purchasing, digital passenger management, and improved route coordination.

In Uganda, transportation has been a major factor in the economic development of the country, and it being a developing country, the transport sector is as well just developing, with a high percentage of the population moving all over the country for different reasons. In Uganda, road transport is the major mode of transport used-it being the most affordable and convenient mode-like use of buses, taxis, trucks. And some of the bus companies engaged in transportation are Link Buses, YY Buses, Global Coaches, Gateway Buses, among others that connect to different parts of Uganda. Air transport is also being used for international flights, with airlines such as Uganda Airlines and Emirates, among others, that transport people. In addition, Uganda Airlines have broadened and made their areas of destination also now as far as London, Egypt, Saudi Arabia, among others, which has really improved transportation in Uganda. Some of the major routes being used in Uganda include Kampala-Masaka Road, Kampala-Soroti Road, Kampala-Nakasongola Road, which almost connect to all the regions of Uganda.

Currently, about 78% of the people use road transport, 8% use water transport over lakes like lake Victoria, lake Kyoga, lake Edward, lake George, lake albert by use of ferries, boats, and engine boats, the train is also being used especially by people around Kampala city in areas of Luzira, Kireka, Nsambya, Namboole among others, and lastly, air transport too is used especially for international flights basing on the 23rd, July 2025 new vision newspaper.

Kakise bus company is one of the bus companies in Uganda based in Soroti and the eastern part of the country, which mainly connects communities and the people by offering them cheap and affordable transportation services. As a bus company, some of the routes it follows include Kampala-Jinja road, Jinja-Mbale road, Mbale-Soroti road, Tirinyi-kumi road, Soroti-lira road, Soroti-Moroto road among others, with all the services, the company is currently facing several challenges like inadequate use of modern technology such as making online booking, limited access to online information about the company that hinder its efficiency and growth.

The aim of the study is to develop a travel agency management system for Kakise Bus Company, in order to solve the current challenges it's facing by improving online bookings by building a user-friendly interface with options of bookings, making payment, and also ease feedback from clients to improve on efficiency and customer satisfaction.

1.2 Problem statement for Kakise Bus Company.

Kakise Bus Company should be operating smoothly and efficiently with automated systems that manage bookings, customer records, and payments with ease. A properly integrated system should provide real-time updates, improve data management, and enhance customer service for effective efficiency and customer satisfaction. In practice, however, Kakise Bus company uses manual processes, which have caused inefficiencies regarding delayed booking processes, mismanagement in managing customer data, and tracking financial transactions. Due to the lack of automation, frequent errors may occur along with double bookings, causing delayed service delivery that upsets customers' experiences and negatively affects the profitability of the business. If nothing is done, Kakise Bus Company risks losing customers to larger companies that have already established online systems, and the business will continue struggling with the same challenges. The current research, therefore, seeks to develop a Web-Based Travel Agency Management System that will automate its core business processes, enhance data management,

and improve customer and financial transaction management for enhanced efficiency in operations and customer experience.

1.3: General objectives

1.3.1: Project Goal.

Development of a web-based travel agency management system that could automate booking management, customer records, and payment

1.3.2: Project Objectives.

1. To elicit requirements for the development of a travel agency management system for Kakise Bus Company.
2. To analyze the requirements for the development of a travel agency management system for Kakise bus company.
3. To design a travel agency management system for Kakise Bus Company.
4. To test and deploy a travel agency management system for Kakise bus company.

1.3.3: Project scope.

Time Scope

The travel agency management system project will be completed within a period of one year, focusing on the design, development, testing and deployment of the system. The project shall automate the management of bookings, customer records, and processing of payments.

Geographical scope

Kakise Bus Company is based in Eastern Uganda, with a bus terminal in Kampala connecting communities and districts like Soroti, Kumi, Mbale, Jinja, Moroto, their services also stretch to some parts of Northern Uganda like Gulu, Lira, Dokolo among others.

Project deliverables

1. A fully functional travel agency management system for Kakise Bus Company
2. A secure customer management database that holds the customer's details and travel history.
3. A booking module to facilitate smooth reservations and transaction processing.

4. Automated reporting, user role management system, and technical documentation among others

Key activities

Requirements analysis and planning,

1. System design and database development
2. Application development
3. System testing and debugging
4. User training & deployment
5. Final documentation and project evaluation.

Extent of work to be done.

The system will cover booking automation, customer record management, secure payment integrations, and reporting features.

1.4 Anticipated Significance of Project.

The travel agency management system will solve problems such as inefficiency in booking, customers' management, and payments by automating most key operations, hence minimizing human errors and improving service delivery. It will streamline reservations, store and retrieve customer information securely, integrate different multiple payment options, and generate data reports for informed and data-driven decision-making. It offers efficiency, improved customer satisfaction, data security, and reduced operational costs. We hope to gain hands-on experience, as a team, in software development, database management, problem-solving, and project execution, thus equipping us with valuable technical and teamwork skills for future business-oriented applications.

1.5 Project assumption.

User Adoption & Engagement: The team is assuming here that the travel agency staff will willingly adopt a new system, which is efficient and user-friendly.

2. System compatibility and infrastructure-the system should perform well on normal hardware and software setups used by travel agencies.

3. Data input accuracy and reliability: the project assumes that users' information fed into the system is appropriate and complete.
4. Security and Compliance: The team assumes that the data protection measures put in place in the system will be sufficient to protect sensitive customer financial information from cyber threats.
5. Stakeholder support and feedback-the project assumes the owners, employees, and other stakeholders of the travel agencies will provide active feedback during the system's development and testing phases to ensure the system meets their needs.

SECTION TWO

LITERATURE REVIEW

2.1 Digital Transport Management Technologies

Digital technologies have significantly changed the transport industry operstes around the world making services faster, safer and more organised. According to Nduhura (2022) modern digital transport systems have improved scheduling, ticketing, fleet monitoring, and customer engagement. In Uganda, bus companies are slowly moving away from manual ticketing processes which caused congestion in terminals, delays and mistakes in recording customer information. To overcome these challenges many companies are introducing ICT solutions such as online booking platforms, GPS fleet tracking, and automatic Payment integrate systems for efficiency in public Transport firms. Modern transport systems also enhance accountability through digital records, audit trails, and real-time data visibility. Mukasa (2023) confirms this assertion. All these advancement creates a strong foundation for developing the proposed Kakise Bus Company Travel Agency Management System.

1.2 Bus Service Operations and Management

Bus service operations and management entail ticketing, route planning, fleet scheduling, and customer service delivery. However, literature reviews indicate that most bus companies in Uganda are still at a level where manual management practices dominate, characterized by long queues, seat allocation errors, and loss of customer records. A transport management system ensures the automation of registering passengers, reserving seats, dispatch schedules, and fare payments. The Ministry of Works and Transport studies as of 2022 note that automation will ensure better road transport monitoring, improve safety compliance, and allow structured bookkeeping.

1.3 Companies Operating in Uganda

Bus companies in Uganda, for instance, Link Bus, YY Coaches, Modern Coast, among others, play a crucial role in the transportation of people and their goods across the country. Research indicates that these transport companies have to deal with a considerable number of passengers daily; this makes manual data management not reliable, as stated by Turyasingura, 2022. Most bus companies have never had integrated ICT systems; therefore, they face challenges such as low revenue, incoherent record-keeping, and poor performance reports. Because of this factor,

the government and various transport associations continue to encourage the use of digital systems for ticketing, passenger lists, and compliance documentation. Kakise Bus Company, just like many regional operators, faces problems such as manual booking, long queues, and losing customer records. A digital management system can enhance its operation and thus increase competitiveness.

1.4 Travel Agency Management Systems

Several countries have developed Travel Agency Management Systems to enhance the operational efficiency of bus companies. Such companies enhance booking, monitoring of fleets, customers, and payment integrations. According to the research by Wang & Chen (2022), automated transport systems reduce administrative overhead by 40% and improve accuracy in ticketing and reservations. In Uganda, these systems of travel management are essential in real-time communications, tracking the movement of buses, managing delays, and enhancing the passenger experience. These findings create the basis for the development of a workable management system for Kakise Bus Company.

1.5 Travel Agency Management System Development Approach

A well-structured methodology is required in designing databases, interfaces, and functionalities while developing the management system of a travel agency. It is recommended that Software Development Life Cycle (SDLC) and Object-Oriented Analysis be followed in order for systems to meet users' needs efficiently (Sommerville, 2020). This SDLC approach is very suitable for structured projects like Kakise's system since it provides clear stages of planning, analysis, design, implementation, and testing. Past research indicates that systems designed using such organized methods are more reliable, secure, and user-friendly.

1.6 Benefits of Travel Agency Management Systems

Well-designed travel agency management systems yield major benefits that include improved operational control, increased revenue protection, enhanced customer experience, and more accurate reporting. Automated ticketing eliminates revenue leakages, while digital bookings reduce congestion at terminals. In the case of Kakise Bus Company, therefore, a web-based travel agency management system would support sustainable business growth by integrating all critical operations into a single efficient digital platform.

1.7 Challenges in Implementing Travel Agency Management Systems

Despite the benefits, the management systems of the travel agencies also face problems, especially in developing countries. According to Turyasingura (2022), such a system may face resistance from staff accustomed to manual operations in Ugandan bus companies. Other limiting conditions include limited ICT infrastructure, lack of technical training and high initial development costs. The issue of data security may also affect the adoption of digital platforms since companies have the obligation to ensure that all passengers' information and financial records are secure. However, the challenges involved can be overcome with adequate training, gradual implementation, and the use of secure and affordable open-source technologies.

1.8 Conclusion

The reviewed literature indicates that digital travel agency management systems are required to modernize bus operations in Uganda. They enhance efficiency, reduce operation costs, ensure transparency, and increase customer satisfaction. In spite of the challenges, the benefits outweigh the limitation. In the case of Kakise Bus Company, an integrated travel management system will help the company address most of the operational challenges related to manual ticketing, gaps in communication, among others. This literature provides a strong basis for justifying the need for developing the system that will assist in achieving the business objectives.

SECTION THREE

3.1 Research methodology

This section details the research and development methods guiding the development process of a Travel Agency System for Kakise Bus Company to improve efficiency in booking management and customer records.

3.1. Research Design/Approach

The project team aims to adopt the Design Science Research approach to guide the design and development of Kakise Bus Company Management System. This approach focuses on building and evaluating IT artifacts that have been designed to solve identified organizational problems.

The aim of this Study is to solve challenges of customer data management and travel bookings. In this study, using DSR, the team will focus on the design of a functional user-friendly, and scalable system through an interactive process.

Table: Showing the DSR process

DSR Stage	Research objective to be Addressed	Proposed Method	Expected results
Problem Identification	To identify operational inefficiencies in booking, customer management and payments in travel agencies.	Interviews, Observation of existing manual processes	Clearly defined problem statement and understanding of business needs
Define objectives of solutions	To establish system requirements and performance goals	Requirements gathering, Stakeholder consultation and benchmarking with similar systems	Documented functional and non-functional system objectives
Design and	To design and	Use of UML	Working system prototype

Development	develop a Travel Agency Management System	diagrams, system modeling and window forms in Visual Studio	with booking, customer records and payment modules
Demonstration	To test the Travel Agency Management System	Usability testing, Test cases	Evidence that the system works under expected conditions
Evaluation	To assess the effectiveness, efficiency and usability of the developed system	User feedback, Performance analysis and test reporting	Validated system that meets predefined objectives and user satisfaction.
Communication	To present the developed travel agency system and project outcomes to the supervisor	Oral or online Presentation of team members	Presentation of the System to supervisors

3.2 Project Organization Client

Kakise Bus Company is seeking to smoothen its operations using electronic solutions that reduce paperwork and improve booking efficiency, including better customer management.

3.2.1 Project Owners

The list of major project owners includes:

- Managing Director: Oversees the company and takes charge of making the final decisions.
- An Operational Manager: in charge of bookings, day-to-day operations.
- Finance officer: Monitors the financial performance and prevents fraud ticketing.

3.2.2 System users

The main clients for Kakise Bus company include:

- Travel Agents - Customer bookings, Payments and package creation.
- Consumers - Book tickets online, access timetables of buses, track buses, and provide feedback on services offered in buses.
- System Administrator: responsible for the administration of user accounts, access rights, maintenance, and system security.

3.2.3 Stakeholder Population

Stakeholder Group	Estimated Number
Project Owners	3
Travel agent	5
Customers per bus	80

3.3 Sampling Technique

The research and system development will be performed on a sample size of 55 staff members that will be randomly selected from the population. The sample size has been determined using Krejcie and Morgan's 1970 sample size determination table, which advises an appropriate sample size to assure statistical representatives for a population of over 100.

The study intends to use stratified Random sampling to ensure that different departments within Kakise Bus Company such as operations, finance, customer service, and IT are proportionally represented. This is because the Stratified Sampling helps to ensure that views from all relevant departments are captured, enhancing both accuracy and relevance of the system.

This will also enable the sampling approach to help the team effectively allocate resources, avoid biases in data collection, and develop a system that addresses the needs of all functional units within the organization.

3.4 Sources of Project Data

Our team will gather both primary and secondary data relating to the problem for effective understanding of operational challenges and inefficiencies with the travel agency. The purpose of data collection would be to bring to light the true causes of existing inefficiencies in order to identify the most appropriate requirements that could be developed on a digital Management System for Kakise Bus Company.

3.4.1 Primary Data:

Collected via interviews with staff for example booking agents

Direct observation of daily operations

Group discussions

3.4.2 Secondary data

Online articles and journals on travel agency management in Uganda

Books, government publications and academic papers relevant to travel industry ICT solutions

3.5 Data collection techniques

To elicit accurate requirements for the Travel Agency Management System, our team intends to use the following techniques;

Observation: View staff performing their tasks to understand the current workflow.

Interviews: Directly meeting with staff and managers to garner insights regarding key challenges along with system needs.

Focus discussions: Groups discussing with the users to gather suggestions for the system.

Mind mapping: Brainstorming on how to connect different ideas.

3.6 System Analysis and Design Approach

In developing the Travel Agency System, an Object-Oriented Design shall be used due to its appropriateness in modeling real-world entities such as customers, bookings, tour packages, and payments. OOD promotes modular designs, which enhances code reusability, scalability, and ease of debugging.

3.6.1 Requirement Elicitation

As noted above, the data collection techniques include :

- Observation
- Interviews
- Focus on group discussions

Mind mapping

These techniques ensure that user needs and system requirements are clearly comprehended.

3.6.2 Design Techniques

The following design techniques will be used during the implementation of the Travel Agency System in order to have an efficient, user-friendly, and well-structured system. These techniques include the following;

- **Use case Diagrams:** This shows how different users interact with the system and also what functions they perform.
- **Entity Relationship Diagrams** - Defines the structure of the database through the representation of entities and relations that exist between them.

Wireframes and Prototypes – It provides the visual layout of a user interface, showing how the system will look and function.

- **User Journey Maps** - Shows the steps taken by a user in order to perform any set of tasks within the system.
- **System Architecture and Component Diagrams** present how components of the System are arranged and interact to deliver system functionality.

3.7 Expected Project Limitations

The constraints that the project team anticipates to face, and that could affect the development and implementation of this project, include the following;

3.8 Limited access to relevant Literature and data

Challenge: The team possibly faces difficulties in acquiring updated and localized data about the operations of travel agencies.

Mitigation: Information will be obtained from reliable online databases, academic journals, and interviews with local travel businesses by the team.

3.9 Challenges in Accessing Advanced Development Tools

Challenge: Possibly, the team might not have access to certain premium software tools that may be required for the development of an efficient system.

Mitigation: Utilize open-source tools and free editions of development platforms.

III. Limited Technical Skills

Challenge: Advanced programming for certain functionalities might not be possessed by all members of the team.

Mitigation: The team will engage in free online tutorials, peer training, and consult with the supervisor.

3.6 Ethical Consideration

Informed Consent: Informed consent will be provided to participants on the purpose of the study and how their data will be used.

Confidentiality: The personal data collected shall be kept confidential.

Data protection and security: The system will be designed to protect sensitive information of customers using authentication, encryption, and access control.

Transparency and Honesty: Our team will ensure transparency in their methods and will also be honest about the capabilities and limitations of the system.

3.7 Timeline and Milestone

A detailed Gant chart outlines the project timelines over 10 weeks with the following milestones;

Week	Activity	Milestone
Week 1	Topic selection and problem identification	Project topic approved
Week 2	Literature review and data collection	Background study completed
Week 3	Requirement elicitation and analysis	Requirements documented
Week 4	System design	System design approved
Week 5	Development of core system modules	Prototype of key modules completed
Week 6	Integration and system testing	Fully functional system tested
Week 7	User training and feedback	User feedback gathered
Week 8	Final System deployment and documentation	System deployed and report finalized
Week 9	Project presentation preparation	Presentation materials ready
Week 10	Final Project Presentation	Project presented

3.8 Disclosure and declaration statement

The team declares that generative AI tools will be used strictly under supervisor guidance to assist in literature review and design inspiration. All AI-generated content will be reviewed to ensure academic integrity. There are no conflicts of interest and all the project work is independently developed by the research team.

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