1 Background

The rapid development of information technology has led to its widespread use in various fields, including business operations. As such, the integration of software applications into sales business operations has become a vital need to improve management quality and increase revenue. However, choosing a suitable software application on a suitable platform (web, desktop application, mobile application) for business operations remains a difficult issue, particularly for small and medium-sized businesses.

2 Problem statement

Several sales management applications are available in the market that is suitable for typical business owners, such as KiotViet, a sales management software. Some medium-sized stores have also invested in a suitable management model through a website or computer application, along with supporting devices.
Nevertheless, most applications are commercial, which small store owners cannot afford to invest in, along with the necessary equipment. Therefore, they are forced to rely on manual bookkeeping methods to manage their sales.

3 Aims and objectives

The purpose of this project is to develop a software application that integrates with sales business operations to enhance management quality and increase revenue. This project aims to provide a cost-effective solution for small and medium-sized businesses to manage their sales operations. The developed software application will have a user-friendly interface that allows for easy integration and adoption by businesses.

4 Research objects and scope

4.1 Research Objectives:

The research aims to develop and evaluate a mobile application solution for small businesses to assist in managing sales and inventory. The application will be developed using the Flutter framework and will utilize Firebase as the data platform. The specific objectives of the research are to:

- Investigate challenges faced by small businesses in managing sales and inventory.
- Develop a mobile application solution for small businesses using the Flutter framework and Firebase.
- Evaluate the usability and effectiveness of the developed application through user testing and surveys.

The outcomes of the study will contribute to the knowledge of mobile application solutions for small businesses.

4.2 Research Scope:

- The research investigates the retail business processes of small grocery store owners and businesses. The scope of the study is limited to small businesses and will not consider larger organizations.
- A cross-platform mobile application will be developed using the Flutter library and Google's Firebase technology.

5 Solution approach

- Building a cross-platform mobile application using Flutter.
- Researching Firebase technologies including Firebase Authentication, Firebase Firestore and Firebase Storage.
- Business processes related to the retail operations of small grocery store owners.

6 Summary of contributions and achievements

- This research provides a solution for managing the retail sales aspect of small businesses through the development of a cross-platform mobile application with a user-friendly interface.
- The application is designed to assist small businesses in managing sales and inventory, addressing the challenges they face in this area.

7 Organization of the report

This report includes the following sections:

Introduction: This section provides an overview of the thesis, including the issues that need to be addressed, the history of problem-solving, the objectives of the thesis, the contribution of the thesis, and the content that will be covered.

Content: This section includes a detailed description of the problem, analysis, functional specification, data design and implementation, interface for the application, and evaluation of software testing. The content section is divided into three chapters.

Chapter 1: Problem description. This chapter provides a detailed description of the problem, including functions, requirements, and theoretical foundation.

Chapter 2: System design. This chapter provides an overview of the system, including the architectural design, data design, functional design, and diagrams to help build the system.

Chapter 3: Implementation. This chapter provides an implementation of the system design.

Chapter 4: Testing and evaluation. This chapter presents the testing plan and management, testing scenarios for the main functions of the system.

Conclusion: This section presents the results achieved, the remaining limitations, and the system's further development.