PROJECT REPORT

Electronic library Application

"E-Library"

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ABSTRACT

Due to the increasing saturation of the mobile technology and technology at large, fueled by its inherent properties such as flexibility, ease of use, and ubiquity, mobile e-commerce has gained significant business reputation promising great productivity, high profitability and an immense level of security.

The goal of this project is to design and develop an offline e-library mobile application. Focusing on Sarah, an avid reader, she could explore new books and make purchases conveniently using her debit/credit card information on a mobile phone while she is on the go, traveling on a train.

The application allows a user to just download and gets access to the saved books that are already in the application without creating an account.

The goal of the project was achieved by observing software development procedures and principles for software designs and implementation. In achieving the goal of this project, three major parts were designed and implemented. The design of the UI (User Interface) was implemented by following the Figma tool and Android design guidelines for Android devices.

EXECUTIVE SUMMARY

Electronic library application is a digital sanctuary for book lovers like Sarah, offering a vast collection of literature treasures conveniently from the comfort of your fingertips. With an intuitive interface and a diverse range of genres, we aim at cater for every reader's taste and preference and it's a cost free.

Dive into a world of literature with our extensive collection of books spanning various genres, including fiction, non-fiction, mystery, romance, science fiction, fantasy, self-help and more. Our app boasts a user-friendly interface designed to provide a seamless browsing and free reading with out investing or paying for any of the books.

This application is a free application which gives sarah and other readers to explore the beauty of reading, Stay updated with the author's spotlights, featuring interviews, book signings and exclusive content from your favorite authors, our dedicated customer support team.

INTRODUCTION

1.0 Introduction

Mobile application is the trend today since more that 50% of the global population is using mobile devices and utilizing mobile application to carry out different tasks. The advancement in the wireless technology and the growth in market potentials have led to an increase in the number of mobile device users. The emergence of this technology has given rise to rapid development of mobile e-commerce technologies. This brings on-the-go internet access to the general online and offline market world without geographical and time constraints.

Furthermore, to create a smooth and great user experience, the application does not require you to create or have an account because it's a free account.

1.1. Project Description

In this project, the design and development of an Android application for an electronic library with the integration of it being free to every user. The application provides a smooth comfortable experience for users like Sarah an avid reader, where by even with no internet she will access the material.

The administrators will only be the ones to add or remove the books or materials and a reader like sarah will only see the changes after she is online or has access on internet.

The result of the project was a complete Android mobile application"E-library that is targeted at delivering a solution for an offline bookstore. The project eliminates the need to drive to a retail store outlet, find and pay for a parking place. In addition, considerable time is saved as Sarah does not need to walk throughout the store in search for her favorite book to buy .

1.2 Problem Statement

In today's fast paced world, traditional bookoutlets face difficult times keeping up with the changing requirements, and preferences of current modern consumers. While the love for literature remains strong, the ease and accessibility provided by online sellers have completely changed how people find and buy books.

1.3 Objective

1.3.1 Main Objective

To develop an android online mobile application that Sarah would use even when she's on the go traveling on a train and offline.

1.3.2 Specific Objectives

- To design an android electronic library mobile application(e-library).
- To analyze the problems in the existing applications.

1.4 Purpose and Scope of Study

1.4.1 Purpose

- Provide a user interface that allows users (Sarah) to browse the store and make her own choice even when offline

1.4.2 Scope

The main scope deliverables of the project are to:

- Develop the system and write the code.
- Unit, integration, and system testing should all be performed
- Analyze and develop detailed specifications and requirements
- Prepare high-level and detailed system design specifications
- Prepare a test plan as well as test cases.

Chapter 2: LITERATURE REVIEW

2.1 Introduction

When we use different search engines like google, Wikipedia and so on to search for educational websites and applications, we will find a lot of options. However, there is some ambiguity in selecting suitable content at the proper time. Some websites and applications have been developed that contain stories, novels, essays, and other types of content. E-Commerce applications allow multiple parties involved in a commerce transaction to connect in order to shop for new, secondhand, rare, and out-of-print books. Review of literature for an e-library. The prototype serves as a roadmap for establishing a solid Online Book Ordering System based on user feedback, notably from the perspective of academics, which will be handled by the university's book store. The arranging, however, is still done manually.

According to a software development firm, an e-catalogue delivers vital information about product specifications to potential customers. It makes it easier for potential customers to find the items they want in the format they want. It is the ideal and ideal product catalogue because it does not require printing, has no number or color restrictions, and does not require distribution. The system is described as self-updatable in a few simple clicks, with the content in the e-catalogue always being accurate and, best of all, requiring no reprinting. Furthermore, the e-catalogue promotes the products on its own, with greater interactivity, consumer personalization, and even a shopping cart for inquiries.

Wattpad is one of the most popular online book store site that employ an e-catalogue to display their books. The website lists the many types of books that are available. The book cover can be found on the left side of the main frame, as well as the book description, which includes information such as the title, author, price, and number of volumes left to be sold, as well as customer ratings and this material is being paid for.

2.2 Existing System

Figure 1: wattpad

Wattpad is one of the most well-known e bookstore that is used in the world today, and it is the website that launched the online buying revolution and free books.

Strength

The website is clean and straightforward, with a large search bar at the top that makes discovering books a breeze. Furthermore, the most important part is that all materials are free

Weakness

Wattpad cost rates are unfortunately rather expensive, and these start from less than 10 USD which may be expensive.

Chapter 3: METHODOLOGY

3.1 Research Methodology

The first step in starting this project is gathering all of the necessary requirements in order to develop an application that is easy to maintain and meets user needs. The emphasis is primarily on study into various offline bookstores that are already operational. Accordingly, questionnaires and interviews with target end users have been shown to be the most effective methods for gathering exact data from them. The design

paradigm starts with a prototype of the graphical user interface (GUI) layer(using Figma) and then outlines the application's back end system, which is only visible to the portal's administrators. The prototype's construction was adjusted in response to end-user feedback in order to build an online book store that meets the project's requirements at the completion. Iteration occurs as the prototype is refined to meet the user's needs while also allowing the developer to gain a better understanding of what needs to be done. The application is then deployed on hosting to make it available via the internet after the GUI design prototype is finalized.

Within a software project, the Software Development Life Cycle (SDLC) is a process that is followed for a software project. It is a detailed strategy that describes how to build, maintain, replace, and change or improve particular software. The life cycle is a mechanism for enhancing software quality and the development process itself. During the software development process, numerous software development life cycle models have been established and designed. To assure success in the software development process, each process model follows a set of stages specific to its type. Agile Methodology is the model we are using for this project.

**Figure 2: Ill of SDLC**

3.2 Agile Methodology

To deliver a smooth execution of the project, a methodology has been chosen to assist in managing the project phase by phase, beginning with the initiation and ending with the closure. A methodology is necessary for selecting the best methods, practices,

approaches, and procedures from among the many available. As a result, Agile Methodology was chosen for the development of the e-library application(elibrary). Agile technique is the ideal strategy to complete this project because it divides it into phases and requires constant adjustments and input until the final product is completed.

Agile methodology is an iterative project management strategy that allows a project to adapt to changing working conditions and develop in a short amount of time. In this method, which is referred to as "sprint," a project term is divided into shorter and repeatable stages. Sprint lengths were decided during the project's early planning stages and will be reflected in the final product.
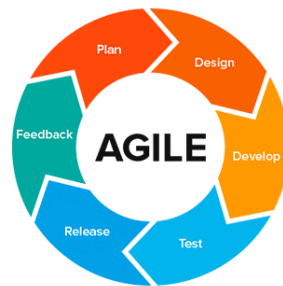
Figure 3: Illustration of Agile Methodology

3.3 Process

3.3.1 Research, Analysis and Gathering Requirement

This phase includes conducting literature reviews and analyses of existing systems in order to determine the requirements and features for an online book store application. Prepare documentation after evaluating the research study. Surveys and feedback are used to gather requirements. Requirements are subject to change over time. The prerequisites for the Online Book Store application are listed below:

1. A product catalogue on the welcome page

    After opening the application the user will be directed to this page. It will provide all of the book categories and provide a search keyword option for finding the desired title. It also has some unique elements, such as recommended titles and weekly special books.

2. Search

    Search textbox provides the user with the option of searching by keyword. The book title should be used as the keyword.

3   Downloads

   If a user (Sarah) downloads the book or novel she will be able to find it in the downloads.

4. Help

   In case the user like Sarah wants help she will be able to leave a comment for the administrators to work on.

Chapter 4: DESIGN

4.1 Introduction

The design phase of the system development process determines the best solution for the problem that was found during the analysis phase. The suggested system's comprehensive blueprint is produced at the end of the design phase. This chapter discusses popular software development processes and the proposed application, alternative solutions, design techniques, and the mobile application Book Store System overall design.

4.2 Development Strategy

The development strategy is the path to follow in order to meet the requirements that have been identified. In terms of the e library App, numerous strategies have been considered. Purchasing a set of commercial software can decrease development costs and time while also providing more quality, but you may have to pay for certain needless features, it may not match all of your requirements precisely, and it is not configurable. Standalone systems have advantages such as being simple to set up and maintain, having fewer incompatibilities, and having less security risks, but they are unable to handle remote users.

4.6 User Interface Design

One of the most important factors in determining an application's user friendliness is its user interface. Because it is the component with which the user interacts. The following are some of the guidelines that were followed:

- Colors, text styles, component structure, and functionality, such as navigations, should all be consistent across all interfaces.

- All interface effects and dynamic changes should have a clear meaning for the user, such as links with a red pointer cursor for deletion or deletion warning, and so on.

- It should be simple for users to understand. Interfaces should be as basic as possible, with helpful features such as tool tips, popup messages, and notifications recommended.

☐   For interfaces such as forms, the data input process should be improved and as

.

4.6.1 Home page Interface

The homepage, which is part of the developed system, is the primary interface for opening the application. Both pages are the initial interface a user encounters in any computerized system. As a result, by properly designing and managing errors, the user might develop a positive attitude toward the rest of the system..
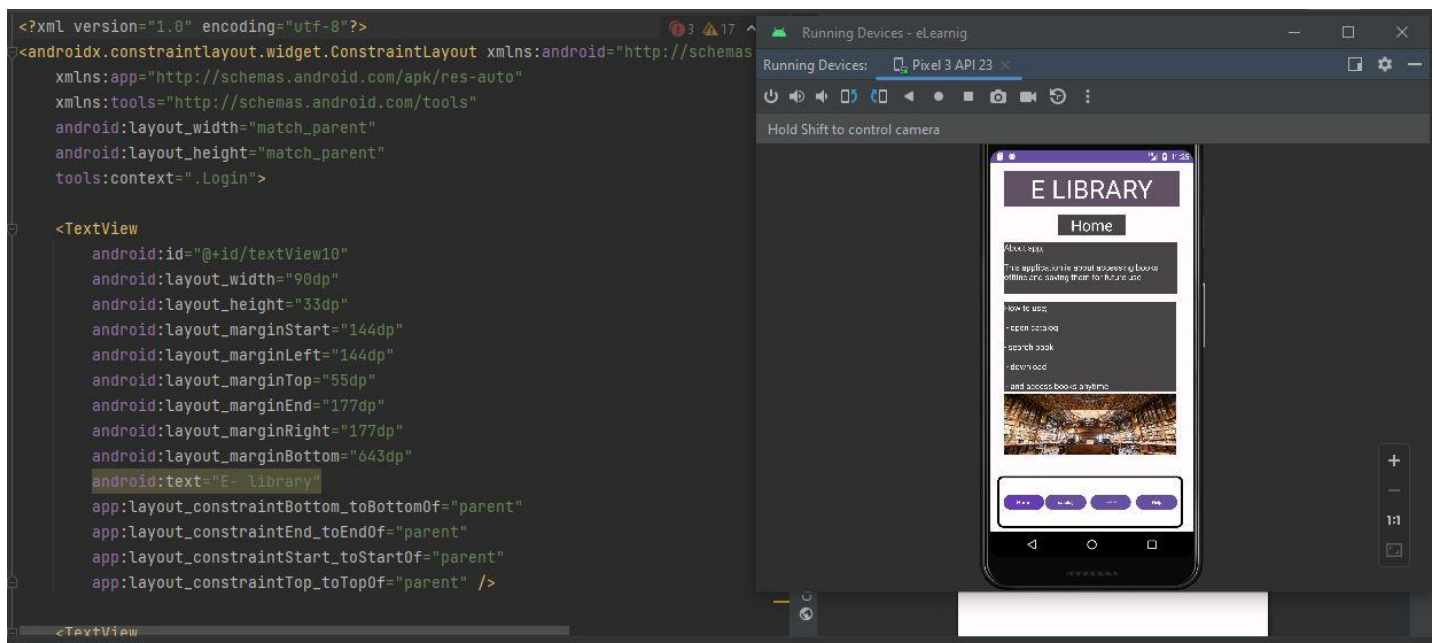

Figure 4: home page interface

4.6.2 Catalog Page

Since first impressions can influence how many people perceive your application, the application home page is typically the first opportunity to hook a potential customer. Then after that u switch to the catalogue page as shown below.
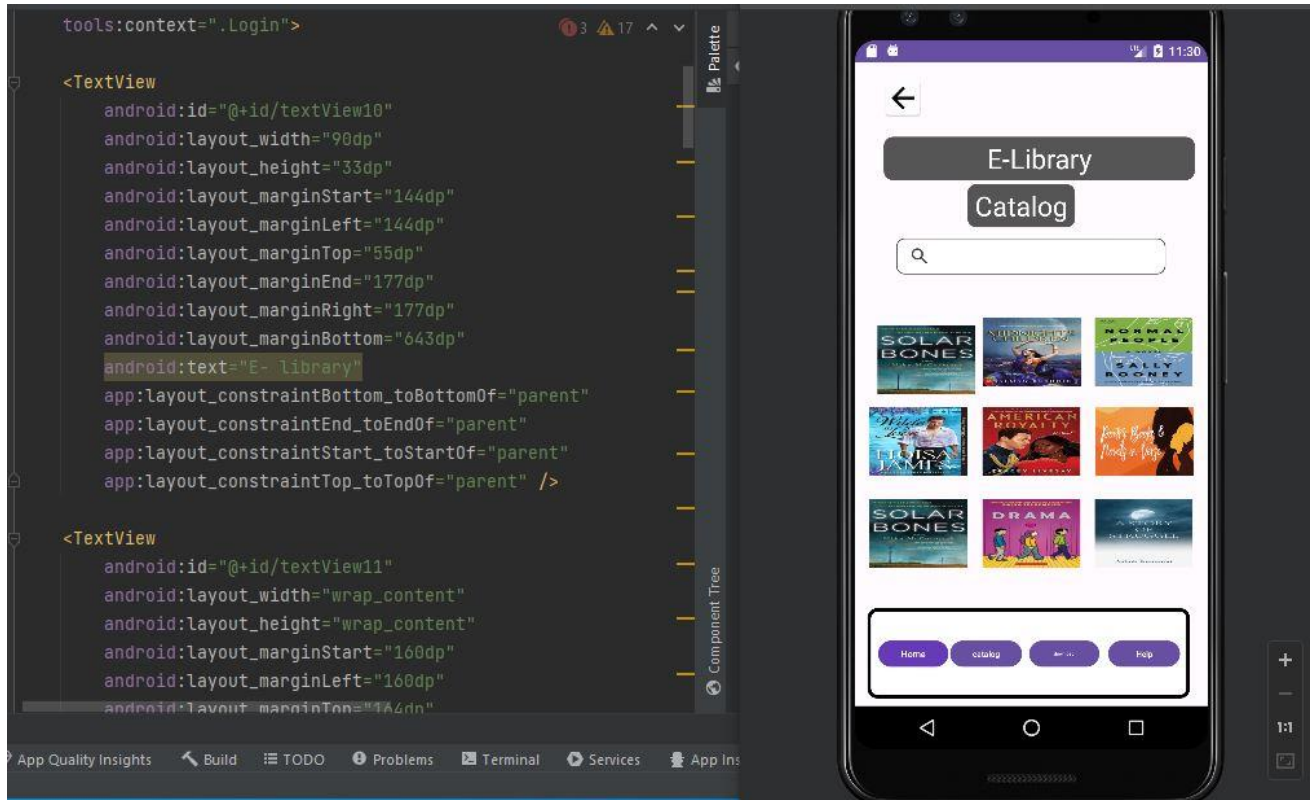

Figure 5: Catalog page

Download Page

The aim of this program is to give users (Sarah) with an opportunity to access all downloaded materials even when she is offline
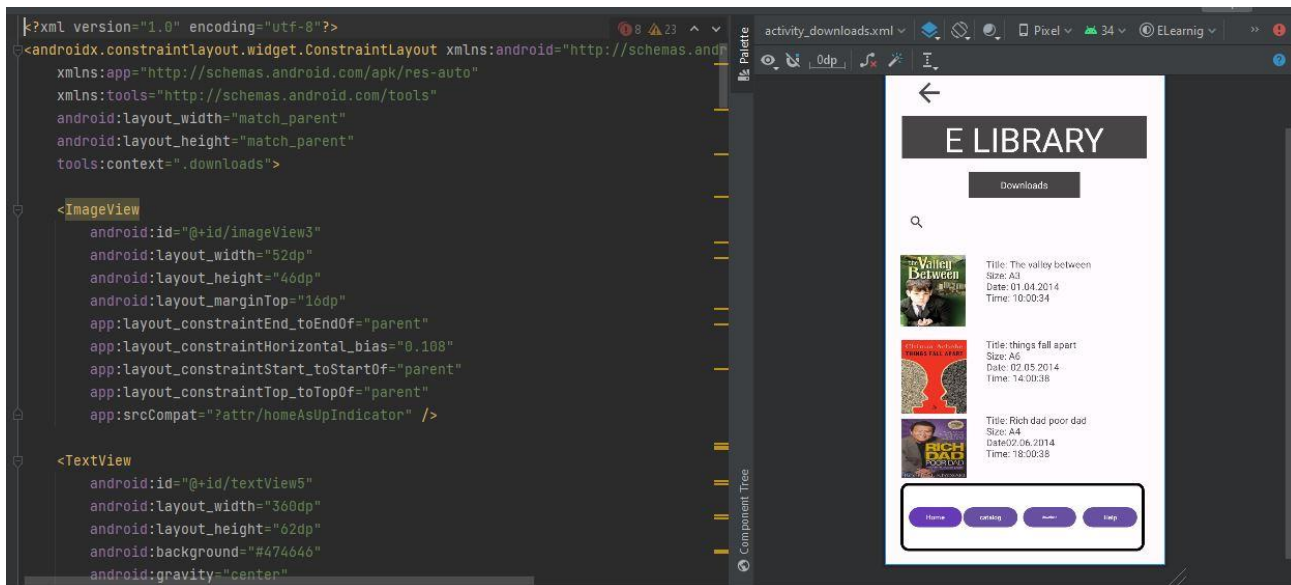

Figure 6: download page

Help page : this page provides users like Sarah) to send feed back to the administrators so to know the problems associated with the application.
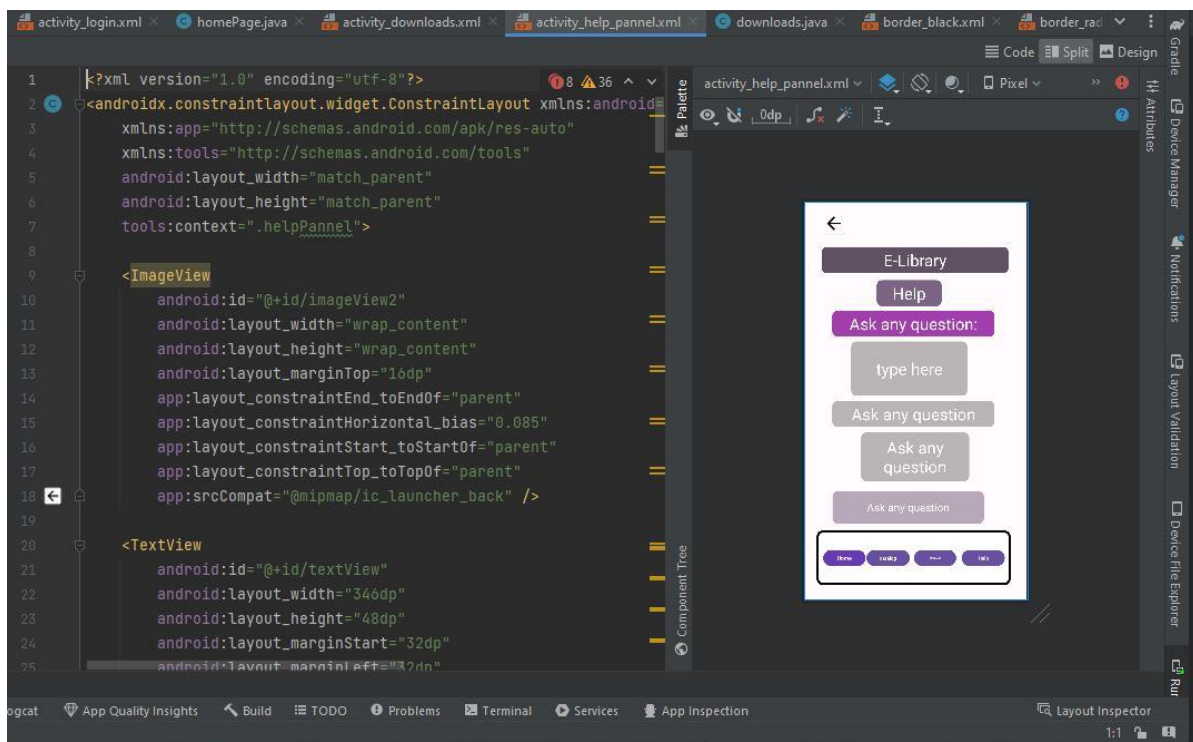
Figure 7: the help page.

Chapter 5: IMPLEMENTATION

5.1 Introduction

The implementation phase entails the development of an executable program based on the design created during the design phase. Selecting programming languages, additional tools and technologies like as frameworks, selecting hardware platforms, and coding the system are some of the main activities carried out during this phase.

The system is evaluated against multiple factors such as functional and non-functional requirements in order to guarantee that it is working properly and meets all of its specified standards during the evaluation phase of the software development process. This chapter discusses the mobile application-based system testing methodologies, test plan, and test cases, as well as test data and outputs and acceptance testing.

This chapter covers the application's implementation environment, the framework, the development tools used, the application's structure, and an explanation of the key code segments.

5.2 Development Tools and Technologies

- JAVA for coding.

5.3 System Testing

The planning of a testing phase is critical for both the development and completion of a system. The test plan should be able to test the overall system's functionality. By extensively testing a system, it is possible to identify and fix errors that occur as a result of the system. Multiple test scenarios were used to evaluate the implemented system. The test plan has continued to test the system units since the development began. Upon completing the system, it was thoroughly evaluated to determine whether it could execute as planned. As a result, this testing stage assisted in the early detection of errors.

Following the system unit testing, integration testing was conducted, which allowed for the detection of errors. To evaluate the functionality of the fully developed mobile application, system testing was performed as the final stage.

5.4 Testing Methods

In software engineering, a number of software testing methodologies and styles have been introduced to test various features of various systems.

Various styles of testing were utilized at various stages of the mobile application's development. During the design phase, unit testing was performed on each individual function of each module to check that they were correct. Following the completion of unit testing, integration testing was performed to check that the functionality of the modules when they interacted with one another was correct. Following the conclusion of the integration testing, system testing was performed on the entire system to guarantee its reliability.

Chapter 6: CONCLUSION

6.1 Conclusion

Electronic library is a well-designed application based on online accessing but besides that it's a free application that provides all reading materials to travelers, students, and other categories of people.

allows customers to compare prices. According to a report, most online shoppers are impulsive and decide whether or not to stay on a site within the first few seconds.

If the shop appears to be run-down or similar to hundreds of other shops, the customer is likely to move on to the next site." As a result, we propose to create the project to give the user as much ease of navigation, data retrieval, and essential feedback as possible. The user is given access to an online bookstore application that can be utilized to purchase books online in this project.

We utilized JAVA as a programming language to make this online mobile application. It has a number of advantages such as improved performance, scalability, security, and simplicity.

A user-friendly shopping cart functionality that matched a solid shopping cart design Viewing the contents of the customer's cart and being able to remove or add items to the cart should be easy.

This project's shopping cart application includes a variety of features aimed at making the customer's experience more pleasant. This project helped us understand how to make interactive mobile pages and the tools that go into making it. The project's development has provided us a thorough understanding of how android studio with JAVA is utilized to develop a mobile application, how it connects to a database to obtain data, and how different pages are linked.