

MOBILE APP DEVELOPMENT AND DESIGN OF PERSONAL MONEY MANAGEMENT

UNDERGRADUATE THESIS

SUBMITTED AS ONE OF THE REQUIREMENTS TO OBTAIN SARJANA KOMPUTER

By

Sola Gracia Citra Andriyani 012202000040

FACULTY OF COMPUTING
INFORMATION SYSTEM STUDY PROGRAM
CIKARANG
SEPTEMBER 2023

PANEL OF EXAMINER APPROVAL

The Panel of Examiners declare that the undergraduate thesis entitled MOBILE APP DEVELOPMENT AND DESIGN OF PERSONAL MONEY MANAGEMENT that was submitted by Sola Gracia Citra Andriyani majoring in Information System from the Faculty of Computer Science was assessed and approved to have passed the Oral Examination on Wednesday September 27, 2023.

Panel of Examiner

ROSALINA

Chair of Panel Examiner

TONG WAN SEN

Examiner I

MOBILE APP DEVELOPMENT AND DESIGN OF PERSONAL MONEY MANAGEMENT

Ву

Sola Gracia Citra Andriyani

Approved:

Genta Sahuri, S. Kom, M. Kom

Final Project Advisor

Ronny Juwoho, S.Pd., M. T.

Head of Information System Program

Rila Mandala, Ph.D

Dean of Faculty of Computing

STATEMENT OF ORIGINALITY

In my capacity as an active student of President University and as the author of the thesis/final project/business plan stated below:

Name

: Sola Gracia Citra Andriyani

Student ID number

: 012202000040

Study Program

: Information System

Faculty

: Computer Science

I hereby declare that my thesis/final project/business plan entitled "MOBILE APP DEVELOPMENT AND DESIGN OF PERSONAL MONEY MANAGEMENT" is to the best of my knowledge and belief, an original piece of work based on sound academic principles. If there is any plagiarism detected in this thesis/final project/business plan, I am willing to be personally responsible for the consequences of these acts of plagiarism, and will accept the sanctions against these acts in accordance with the rules and policies of President University.

I also declare that this work, either in whole or in part, has not been submitted to another university to obtain a degree.

Cikarang, 27 September 2023

Sola Gracia Citra Andriyani

SCIENTIFIC PUBLICATION APPROVAL FOR ACADEMIC INTEREST

As an academic community member of the President's University, I, the undersigned:

Name : Sola Gracia Citra Andriyani

Student ID number : 012202000040

Study program : Information System

for the purpose of development of science and technology, certify, and approve to give President University a non-exclusive royalty-free right upon my final report with the title:

MOBILE APP DEVELOPMENT AND DESIGN OF PERSONAL MONEY MANAGEMENT

With this non-exclusive royalty-free right, President University is entitled to converse, to convert, to manage in a database, to maintain, and to publish my final report. There are to be done with the obligation from President University to mention my name as the copyright owner of my final report.

This statement I made in truth.

Cikarang, 27 September 2023

Sola Gracia Citra Andriyani

ADVISOR APPROVAL FOR JOURNAL/INSTITUTION'S REPOSITORY

As an academic community member of the President's University, I, the undersigned:

Name : Sola Gracia Citra Andriyani

ID number : 012202000040
Study program : Information System
Faculty : Faculty of Computing

declare that following final project:

Title of thesis : MOBILE APP DEVELOPMENT AND DESIGN OF

PERSONAL MONEY MANAGEMENT

Thesis author : Sola Gracia Citra Andriyani

Student ID number : 012202000040

will be published in journal institution's repository / proceeding / unpublish.

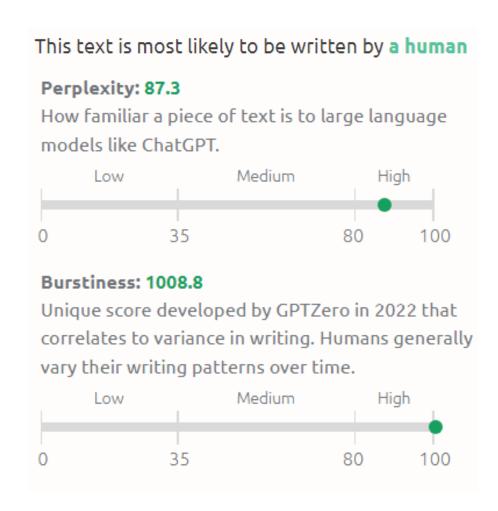
Cikarang, 27 September 2023

Genta Sahuri, S. Kom, M. Kom

MOBILE APP DEVELOPMENT AND DESIGN OF PERSONAL MONEY MANAGEMENT

ORIGIN.	ALITY REPORT			
•	2% ARITY INDEX	8% INTERNET SOURCES	1% PUBLICATIONS	7% STUDENT PAPERS
PRIMAR	RY SOURCES			
1	reposito Internet Sour	ory.president.ac.	id	5%
2	Submitt Student Pape	ed to President	University	1 %
3	Submitt Student Pape	ed to i-CATS Un	iversity College	1 %
4	www.pr	ojecttimes.com		<1%
5	Submitt Student Pape	ed to Segi Unive	ersity College	<1%
6	sokodire Internet Sour	ectory.com		<1%
7	Submitt Student Pape	ed to Roehamp	ton University	<1%
8		ed to Southern ity - Continuing	•	e <1%

GPT ZERO CHECK



ABSTRACT

The demand for effective and user-friendly tools to manage personal finances grows as the digital era continues to influence our daily lives. This final project, "Mobile App Development and Design of Personal Money Management," aims to fill this need by creating a thorough mobile application made to aid people in managing their personal finances more effectively.

The primary objective of this research is to create a mobile app, specifically for the Android platform, that offers features for recording financial transactions, such tracking expenses and income. The app utilizes modern mobile development technologies, including Jetpack Compose for Android UI design.

The research begins with a detailed analysis of the challenges individuals face in managing their personal finances and explores existing solutions in the form of mobile applications. Subsequently, the study delves into the theoretical foundations, technical techniques, and methodologies relevant to mobile app development, including user experience (UX) design principles.

The development process employs an iterative approach based on the waterfall methodology, ensuring systematic and structured progress. The application incorporates a user-friendly interface that simplifies the recording of financial transactions, allowing users to categorize expenses and income conveniently.

This final project culminates in a fully functional Android mobile application, providing a practical solution for personal money management. With its reliable features and user-centered design, the application aims to enable users to take charge of their finances, make wise financial decisions, and ultimately achieve greater financial stability.

By providing a user-centric, feature-rich mobile solution, "Mobile App Development and Design of Personal Money Management" contributes to the expanding field of personal finance management applications. The research underscores the importance of harnessing technology to promote financial literacy and responsible financial management in an increasingly digital world.

Keyword: Mobile Programming, Money Management, Jetpack Compose

ACKNOWLEDGEMENTS

First and foremost, I would like to express my greatest gratitude to God Almighty for all His blessings throughout my college journey. I also would like to express the deepest gratitude to those who have supported me.

- 1. My parents and siblings, for the love, prayers, caring, and sacrifices for educating and preparing me for my future.
- 2. My advisor, Mr. Genta Sahuri, S. Kom, M. Kom, for their advice, guidance, unwavering support, and constructive feedback throughout the process of this final project.
- 3. All the lecturers who have taught me and delivered all knowledges during my studies in President University.
- 4. All my friends that I could not mention one by one, for their continuous encouragement and support during my studies.
- 5. Finally, I would also like to take a moment to thank myself for the hard work and dedication during my university years that have brought me to this point.

TABLE OF CONTENTS

ABSTI	RACT	Γ	V
ACKN	OWI	LEDGEMENTS	vi
TABLI	E OF	CONTENTS	vii
LIST ()F FI	GURES	Х
LIST (F TA	ABLES	xi
CHAP'	TER	I	1
1.1	Bac	kground	1
1.2	Pro	blem Statement	2
1.3	Obj	ectives	2
1.4	Sco	pe and Limitations	3
1.4	4.1	Scope	3
1.4	4.2	Limitations	3
1.5	Pro	ject Methodology	3
1.6	Fin	al Project Outline	4
CHAP'	TER	II	6
2.1	And	droid Mobile Application Development	6
2.	1.1	The Development of Android	6
2.	1.2	Android Architecture	6
2.	1.3	Benefits of Developing Android Applications	7
2.2	Lan	guage and Development Framework Selection	7
2.2	2.1	Kotlin: The Ultimate Programming Language	7
2.2	2.2	User Interface (UI) Development Framework for Jetpack	8
2.3	Fin	ancial Data Integration and Processing	8
2.3	3.1	Handling Financial Data	9
2.3	3.2	Financial Data Processing and Analysis	9
2.3	3.3	Comparison Overview	10
CHAP'	TER	III	11
3.1	Sys	tem Overview	11
3.2	Fun	ctional Analysis	11

3.3 Hardware and Software Requirem		Hardware and Software Requirement	11
	3.4	Use Case Diagram	
	3.5	Use Case Narrative	13
	3.6	Activity Diagram	18
	3.6.	.1 Activity Diagram of Dashboard	18
	3.6.	.2 Activity Diagram of Add Transaction	19
	3.6.	.3 Activity Diagram of Filter Transaction	20
	3.6.	.4 Activity Diagram of Add Account	21
	3.6.	.5 Activity Diagram of Edit Account	22
	3.6.	.6 Activity Diagram of Filter Transaction and Show as Graph	23
Cl	HAPT	TER IV	25
	4.1	User Interface Design	25
	4.1.	.1 UI Design of Dashboard Page	25
	4.1.	2 UI Design of Add Transaction	27
	4.1.	.3 UI Design of Filter Transaction	28
	4.1.	.4 UI Design of Add Account	29
	4.1.	.5 UI Design of Edit Account	30
	4.1.	.6 UI Design of Filter Transaction and Show as Graph	31
	4.2	Physical Design	32
Cl	HAPT	TER V	34
	5.1	User Interface Implementation	34
	5.1.	1 Dashboard	34
	5.1.	.2 Add Transaction	36
	5.1.	.3 Filter Transaction	37
	5.1.	.4 Add Account	38
	5.1.	.5 Edit Account	39
	5.1.	.6 Filter Transaction and Show as Graph	40
	5.2	Application Details	40
	5.2.	1 Dashboard	40
	5.2	2 Add Transaction	41

5.2	3	Filter Transaction	42
5.2	.4	Add Account	43
5.2	.5	Edit Account	44
5.2	.6	Filter Transaction and Show as Graph	45
СНАРТ	ΓER	VI	47
6.1	Tes	sting Environment	47
6.2	Tes	sting Scenario	47
6.2	.1	Transaction Menu (Dashboard)	47
6.2	.2	Graph Menu	52
6.2	.3	Balance Menu	55
СНАРТ	ΓER	VII	60
7.1	Coı	nclusion	60
7.2	Fut	rure Works	60
REFER	EN	CES	61

LIST OF FIGURES

Figure 1.1 Waterfall Modeling Stage	. 4
Figure 3.1 Use Case Diagram of Personal Money Management System	. 13
Figure 3.2 Activity Diagram of Dashboard	. 19
Figure 3.3 Activity Diagram of Add Transaction	. 20
Figure 3.4 Activity Diagram of Filter Transaction.	. 21
Figure 3.5 Activity Diagram of Add Account	. 22
Figure 3.6 Activity Diagram of Edit Account	. 23
Figure 3.7 Activity Diagram of Filter Transaction and Show as Graph	. 24
Figure 4.1 Dashboard User Interface Design	. 26
Figure 4.2 Add Transaction User Interface Design.	. 27
Figure 4.3 Filter Transaction User Interface Design.	. 28
Figure 4.4 Add Account User Interface Design	. 29
Figure 4.5 Edit Account User Interface Design	. 30
Figure 4.6 Filter Transaction and Show as Graph User Interface Design	. 32
Figure 5.1 Dashboard Page	. 34
Figure 5.2 Top Expenses	. 35
Figure 5.3 Add Transaction.	. 36
Figure 5.4 Filter Transaction.	. 37
Figure 5.5 Add Account	. 38
Figure 5.6 Edit Account	. 39
Figure 5.7 Filter Transaction and Show as Graph	. 40
Figure 5.8 Dashboard Page - Code	. 41
Figure 5.9 Add Transaction - Code	. 42
Figure 5.10 Filter Transaction - Code	. 43
Figure 5.11 Add Account - Code	. 44
Figure 5.12 Edit Account - Code	. 45
Figure 5.13 Filter Transaction - Code	. 46
Figure 5.14 Show Graph - Code	. 46

LIST OF TABLES

Table 2.1 Comparison of Application Features	. 10
Table 3.1 Function Description	. 11
Table 3.2 Use Case Narrative of Dashboard	. 14
Table 3.3 Use Case Narrative of Add Transaction	. 15
Table 3.4 Use Case Narrative of Filter Transaction	. 16
Table 3.5 Use Case Narrative of Add Account	. 17
Table 3.6 Use Case Narrative of Edit Account	. 17
Table 3.7 Use Case Narrative of Filter Transaction and Show as Graph	. 18
Table 4.1 Dashboard Description	. 27
Table 4.2 Add Transaction Description	. 28
Table 4.3 Filter Transaction Description	. 29
Table 4.4 Add Account User Interface Design	. 30
Table 4.5 Edit Account Description	. 31
Table 4.6 Filter Transaction and Show as Graph Description	. 32
Table 4.7 Software Requirement	. 33
Table 4.8 Hardware Requirement	. 33
Table 6.1 Transaction Menu (Dashboard Page) Evaluation	. 47
Table 6.2 Graph Menu Evaluation	. 53
Table 6.3 Balance Menu Evaluation	. 55