



## Table of Contents

Preface.....	i
Pernyataan Bebas Plagiasi.....	ii
Halaman Pengesahan .....	iii
Table of Contents.....	iv
Table of Tables .....	vii
Table of Figures.....	viii
Abstract .....	xi
Chapter I_Introduction.....	1
1.1Research Background.....	1
1.2 Research Problem.....	4
1.3 Solution Proposed .....	5
1.4 Research Scope .....	5
1.5 Research Objective.....	6
1.6 Research Benefit .....	6
Chapter II_Literature Review.....	7
Chapter III_Basic Theory.....	12
3.1 Object-Oriented Programming.....	12
3.1.1 Pillars of Object Oriented Programming .....	12
3.2 Imperative Programming .....	13
3.3 Reactive Programming .....	14
3.3.1 Reactive Programming Algorithm Pseudocode .....	14



3.4	Swift Programming Language .....	15
3.5	Firebase, Firebase Realtime Database, Firebase Authentication, Firebase Storage.....	16
3.6	Software Development Process Methodology .....	17
3.6.1	Waterfall Software Development Life Cycle.....	17
	Chapter IV Methodology .....	20
4.1	Research Description.....	20
4.2	Tool and Material.....	20
4.3	Research Phase .....	20
4.3.1	Literature Study.....	22
4.3.2	Pre Development Survey .....	22
4.3.3	Solution Proposed.....	26
4.3.4	Application Requirement Analysis.....	26
4.3.5	Application Development.....	27
4.3.6	Testing .....	28
4.3.7	Deployment.....	28
4.3.8	Final Result Survey and Review .....	29
	Chapter V Implementation.....	30
5.1	Pre-Development Survey .....	30
5.2	Application Requirement Analysis .....	46
5.3	Application Development and Coding .....	75
5.4	Project Architecture.....	75
5.5	Database Architecture .....	76
5.6	Reactive Programming .....	83
5.6.1	Reactive Programming in Homepage.....	83



5.6.2 Reactive Programming in Homepage for Search Function .....	87
5.6.3 Reactive Programming for Favorite Product Mechanism .....	90
5.6.4 Reactive Programming for Fetching My Product .....	98
Chapter VI <u>Testing and Deployment</u> .....	100
6.1 Blackbox Testing .....	100
6.2 Deployment.....	104
6.3 Final Result Survey .....	104
Chapter VII <u>Conclusion and Suggestion</u> .....	112
7.1 Conclusion .....	112
7.2 Suggestion.....	113
References .....	114