

Final Year Project Report

A thesis submitted in the partial fulfillment of degree of BSE

Senior Android Suite



Bahria University Islamabad

16th April, 2018

Supervisor

Engr. Adeel M Syed

Group Members

Hafiz Ammar Mazhar Bhutta (01-133142-269)

Mehwish Bilal (01-133142-177)

Software Engineering Department

ABSTRACT

Technological innovation most of the times depends on the design of the user interface which reinforces such technical complexities of the products that primarily match the requirements of the end user. Any technological product is accepted only if the end user is able to understand its functionality and its usage. User experience regarding smartphones has been studied and researched widely all over the world to enhance the optimal performance of technical products like smartphones. The ambiguous area of research that stood out in the studies was that of smartphone usage by elderly people. According to the global trends of population, the population of seniors has been found to be incredibly increasing from 962 million that was in 2017 to 2.1 billion that is expected to be in 2050. The result, apparently, will be a world with older people with roughly the ratio of one out of six aged 60 and above. Moreover, it has been estimated that 86.7% of population of the world has smartphone subscriptions among which 37.2% are old people. So, catering to the issues of the old people related to smartphones happens to be an essential need coming up in the near future. Most of the times seniors do not need to use phones like youngsters or teenagers do i.e. social media, games, apps, etc. Their main need is connectivity and the basic task they normally do is to use the basic features. In order to consummate this goal, our project will first propound the area of research we have targeted and the issues that are diagnosed. That, are briefly, the hindrances elder people face in order to operate smartphones. The essence of the project we have worked on is mainly the refurbishing of the features in smartphone User Interface (UI) that can aid in the simplest and optimal use of mobile phones for seniors. The applications, user interface and other various features have been designed according to the requirements of the senior people.

Table of Contents

INTRODUCTION	1
1.1 Motivation.....	3
1.2 Problem Statement.....	3
1.3 Goals/Objectives	4
1.4 Main Contributions	4
1.4 Thesis Organization	4
BACKGROUND/LITERATURE REVIEW	6
2.1 Human Computer Interaction.....	7
2.2 The Suspected issues related to age and their implications.....	8
2.3 Problems faced by elderly people and their solutions.....	10
2.4 Related Applications.....	11
SYSTEM REQUIREMENTS	14
3.1 Interface Requirements	15
3.1.1 User Interfaces	15
3.1.2 Hardware Interfaces	15
3.2 Functional Requirements	15
3.2.1 Use Case diagrams	16
3.3 Use Case description	17
3.3.1 Create Contact.....	17
3.3.2 View Contact List.....	18
3.3.3 Delete Contact.....	19
3.3.4 Search Contact	19
3.3.5 Send Message.....	20
3.3.6 Reply Message	22
3.3.7 Delete Message.....	23
3.3.8 View Conversation	23

3.3.9	Take photo.....	24
3.3.10	Record video.....	25
3.3.11	View Images.....	25
3.3.12	View Videos.....	26
3.3.13	Set Resolution.....	27
3.3.14	Toggle Camera.....	28
3.3.15	Dial Number.....	28
3.3.16	View Recent Calls.....	29
3.4	Non-Functional Requirements	30
3.4.1	Performance	30
3.4.2	Accessiability.....	30
3.4.3	Safety.....	31
3.4.4	Availability.....	31
3.5	Database Requirements	31
3.6	Project Feasibility.....	31
3.6.2	Operational feasibility	31
3.6.3	Legal/Ethical feasibility	31
SYSTEM DESIGN		32
4.1	Design Approach	33
4.2	Design Constraints	33
4.2.1	Design:	33
4.2.2	Assumptions and Dependencies	33
4.3	Interface Design	34
4.3.1	Interface Design Rules.....	34
4.3.2	Low Fidelity Prototype	35
4.3.3	High Fidelity Prototype	38
4.4	Data-Flow Diagrams	47
4.4.1	DFD Context Level	47
4.4.2	DFD Level 0	47

4.4.3	DFD Level 1	48
4.5	State Transition Diagrams	49
4.6	Sequence Diagrams	50
4.11	Class Diagrams	56
	SYSTEM IMPLEMENTATION	57
5.1	Strategy	58
5.2	Tools Used	58
5.3	System Architecture	58
	SYSTEM TESTING	60
6.1	Test Strategy	61
6.1.1	Component Testing	61
6.1.2	Unit Testing	61
6.1.3	Integration Testing	68
6.1.4	System Testing	68
	CONCLUSION	84
	BIBLIOGRAPHY / REFERENCES	85
	APPENDIX	87