



Ammad Mustafa  
01-134132-023  
Muhammad Ahmed Fayyaz  
01-134122-079

## **Smart Home Android Application**

Bachelor of Science in Computer Science

Supervisor: Ms.Mehwish Pervaiz

Department of Computer Science  
Bahria University, Islamabad

February 2017

<b>CERTIFICATE .....</b>	<b>2</b>
<b>CHAPTER 1 INTRODUCTION .....</b>	<b>5</b>
1.1 Project Background/Overview .....	5
1.2 Problem Description.....	5
1.3 Project Objectives.....	5
1.4 Project Scope.....	6
<b>CHAPTER 2 LITERATURE REVIEW.....</b>	<b>7</b>
2.1 APPLICATIONS SIMILAR TO OUR PROJECT .....	7
<b>CHAPTER 3 REQUIREMENT SPECIFICATIONS.....</b>	<b>9</b>
3.1 PROJECT OVERVIEW .....	9
3.2 FUNCTIONAL REQUIREMENTS.....	9
3.2.1 Customize Home .....	9
3.2.2 Select room .....	10
3.2.3 Select device.....	10
3.2.4 Control Appliances .....	11
3.2.5 Switch On/off main network switch.....	11
3.2.6 Alert user.....	12
3.2.7 Display room temperature .....	12
3.2.8 Suggestions notifications .....	13
3.3 NON-FUNCTIONAL REQUIREMENTS.....	13
3.3.1 Usability .....	13
3.3.2 Reliability.....	15
3.3.2.1 Availability .....	15
3.3.3 Performance.....	16
3.3.4 Supportability.....	17
3.3.4.1 Coding standards .....	17
3.4 USE CASES.....	18
3.4.1 Complete Use Cases .....	18
<b>CHAPTER 4 DESIGN .....</b>	<b>25</b>
4.1 SYSTEM ARCHITECTURE .....	25
4.2 DESIGN METHODOLOGY.....	26
4.3 DATABASE DESIGN .....	27
4.4 EXTERNAL INTERFACES.....	27
<b>CHAPTER 5 SYSTEM IMPLEMENTATION .....</b>	<b>28</b>
5.1 SYSTEM ARCHITECTURE .....	28
5.2 DATA REPRESENTATION .....	29
5.2.1 ERD for Android Database: .....	29
5.3 PROCESS FLOW/REPRESENTATION .....	30
5.3.1 Authentication: .....	30
5.3.2 Control Devices: .....	31
5.4 DESIGN MODELS .....	32
5.4.1 CLASS DIAGRAM:.....	32
5.4.2 Sequence Diagram: .....	33
5.4.3 Registration.....	33
5.5 CONTROL DEVICES.....	35
5.5.1 Set Preference .....	37
5.6 IMPLEMENTATION .....	38
5.6.1 Algorithm .....	38

5.7 USER INTERFACE .....	39
<b>CHAPTER 6 TESTING .....</b>	<b>40</b>
6.1 SELECTED TESTING METHODOLOGY.....	40
6.1.1 Use-case based testing.....	40
6.2 FUNCTIONAL TESTING.....	48
6.2.1 White Box Testing .....	49
6.2.2 Black Box Testing .....	49
<b>CHAPTER 7 CONCLUSIONS .....</b>	<b>51</b>
7.1 CONCLUSION .....	51
7.2 FUTURE WORK .....	51
<b>BIBLIOGRAPHY .....</b>	<b>52</b>