Lighting Pattern Simulator

Software Requirements Specification

Submitted By

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Revision History

Date	Version	Description	People
18 Feb 2018	1.0	First draft	Project Group: Satya Bhavsar Paridhi Gehlot
3 March 2018	2.0	Second Draft	Project Group: Satya Bhavsar Paridhi Gehlot
24 April 2018	3.0	Third Draft	Project Group: Satya Bhavsar Paridhi Gehlot

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Software Requirements Specification

1. Introduction

1.1 **Purpose:** The purpose of the project is to simulate different lighting patterns on different types of buildings.

1.2 **Scope:** The product is aimed to provide a way to demonstrate the lighting patterns to the customers. It is built for lighting corporations so that they can view what the lighting patterns look like on the actual building and increase customer satisfaction. The customers can select from a variety of building types and patterns. The company can view the customer history.

1.3 Constraints:

1. The number of building types is limited to 5**.**
2. For each building a fixed number (i.e. 4) of lighting patterns are available.

1.4 Assumptions and Dependencies:

1. The building patterns and the light patterns are assumed to be fixed.
2. There exists only 1 admin.

1.5 Definitions, Acronyms and Abbreviations

Term	Definition
*	Represents white light
#	Represents red light
@	Represents blue light
.	Represents blank space in building, light pattern and design
| ,\ ,/,o	Represents building boundary
Admin	The administration

1.6 References

[1] IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.

2. Overall Description

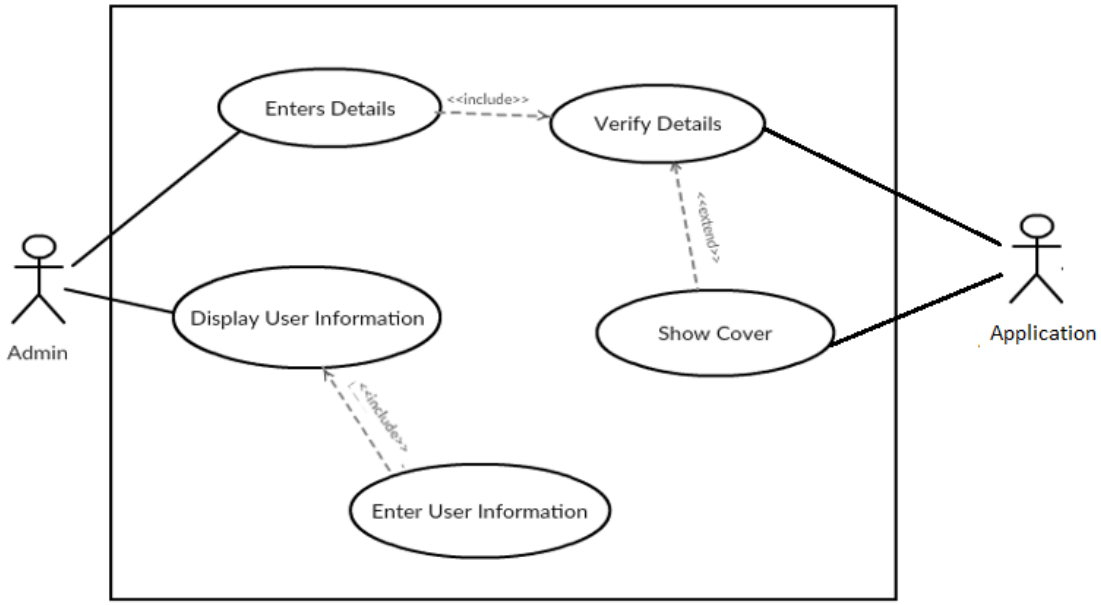
2.1 Product Functions

2.1.1 Functional Requirements:

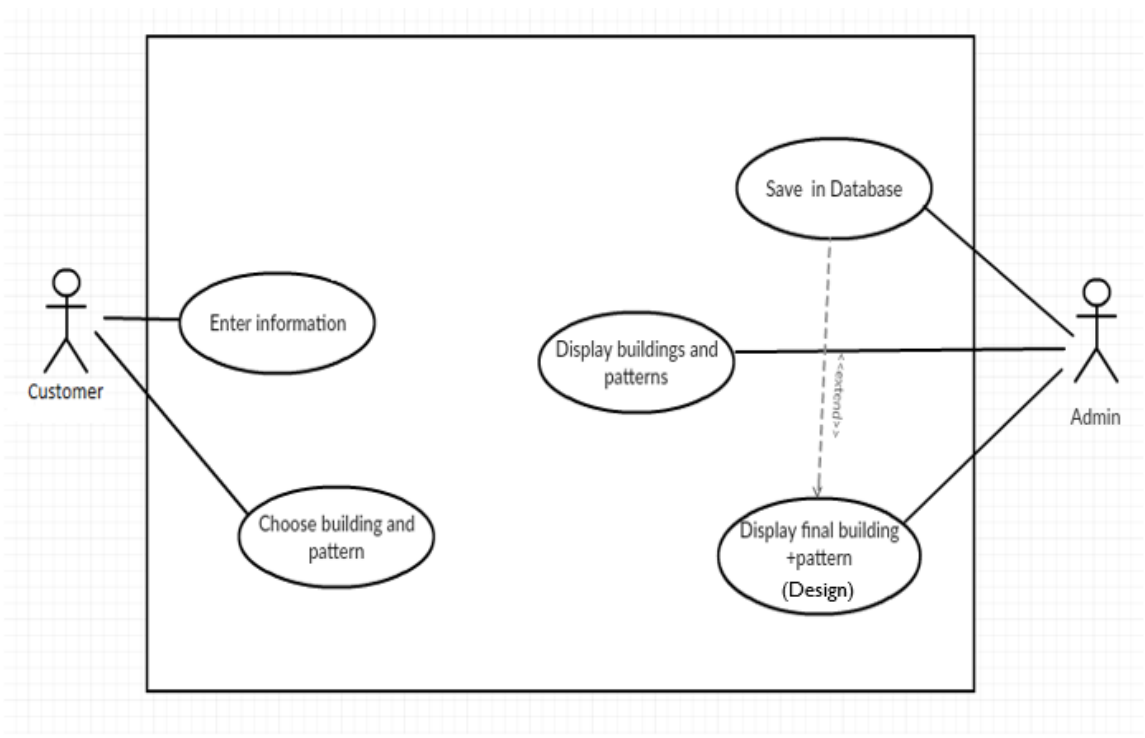
1. Administration can view user history.
2. The customer can view and select building type.
3. The customer can view and choose associated lighting pattern.
4. The customer can view final simulation of light pattern on building.

2.1.1.1 *Use Case Diagram:*

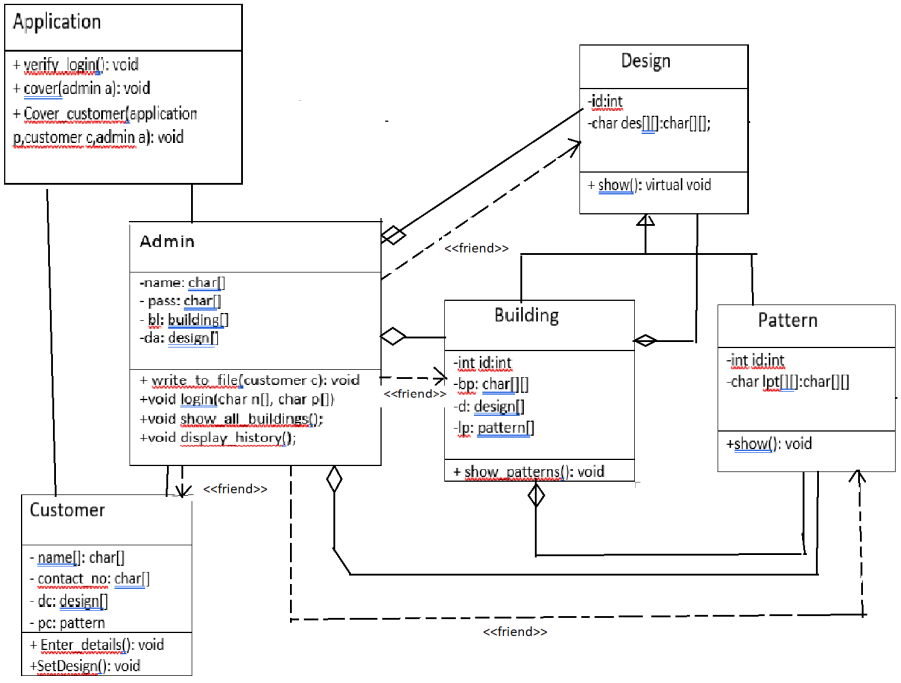
Use Case: Login



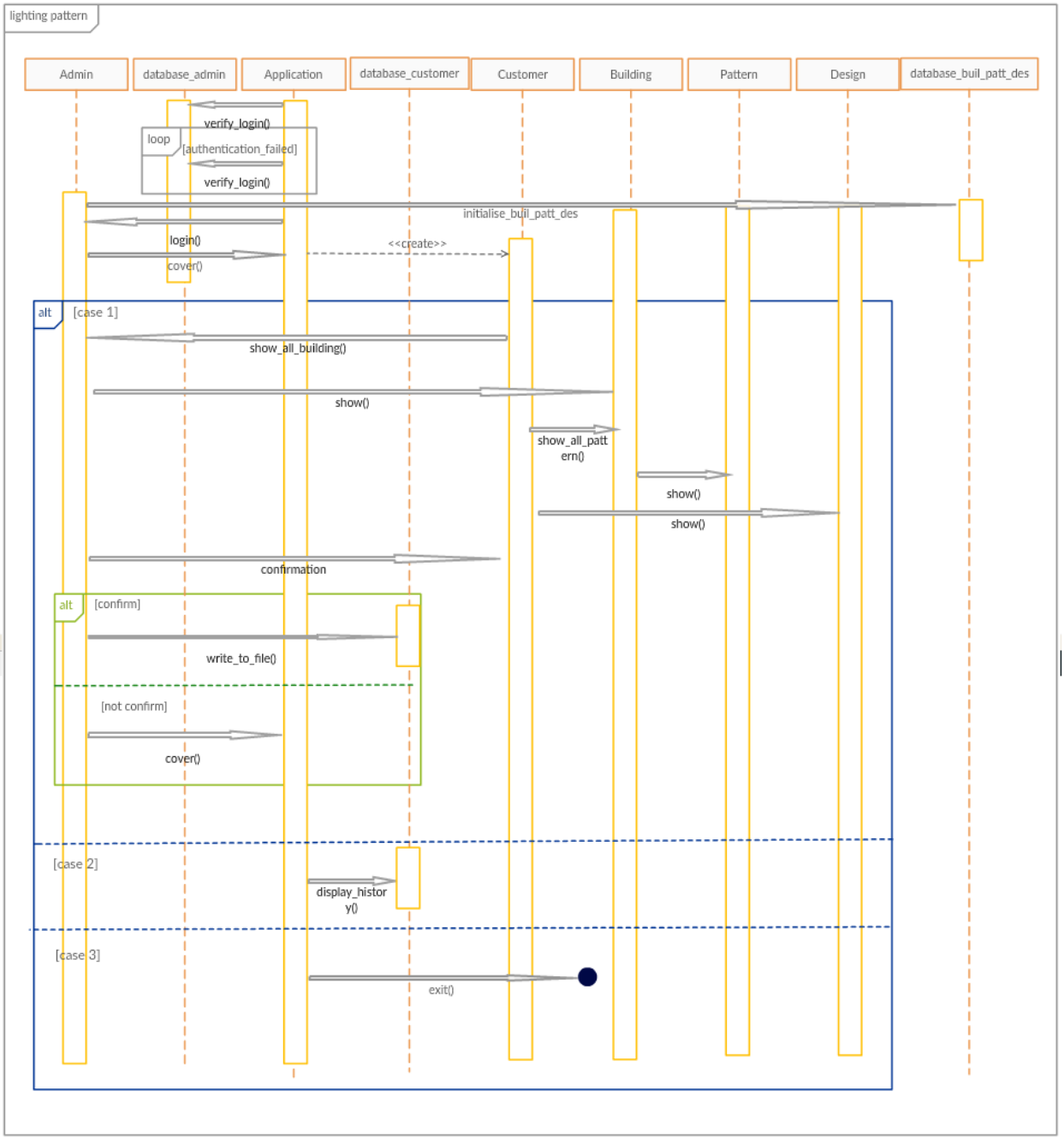
Use Case: Simulate_design



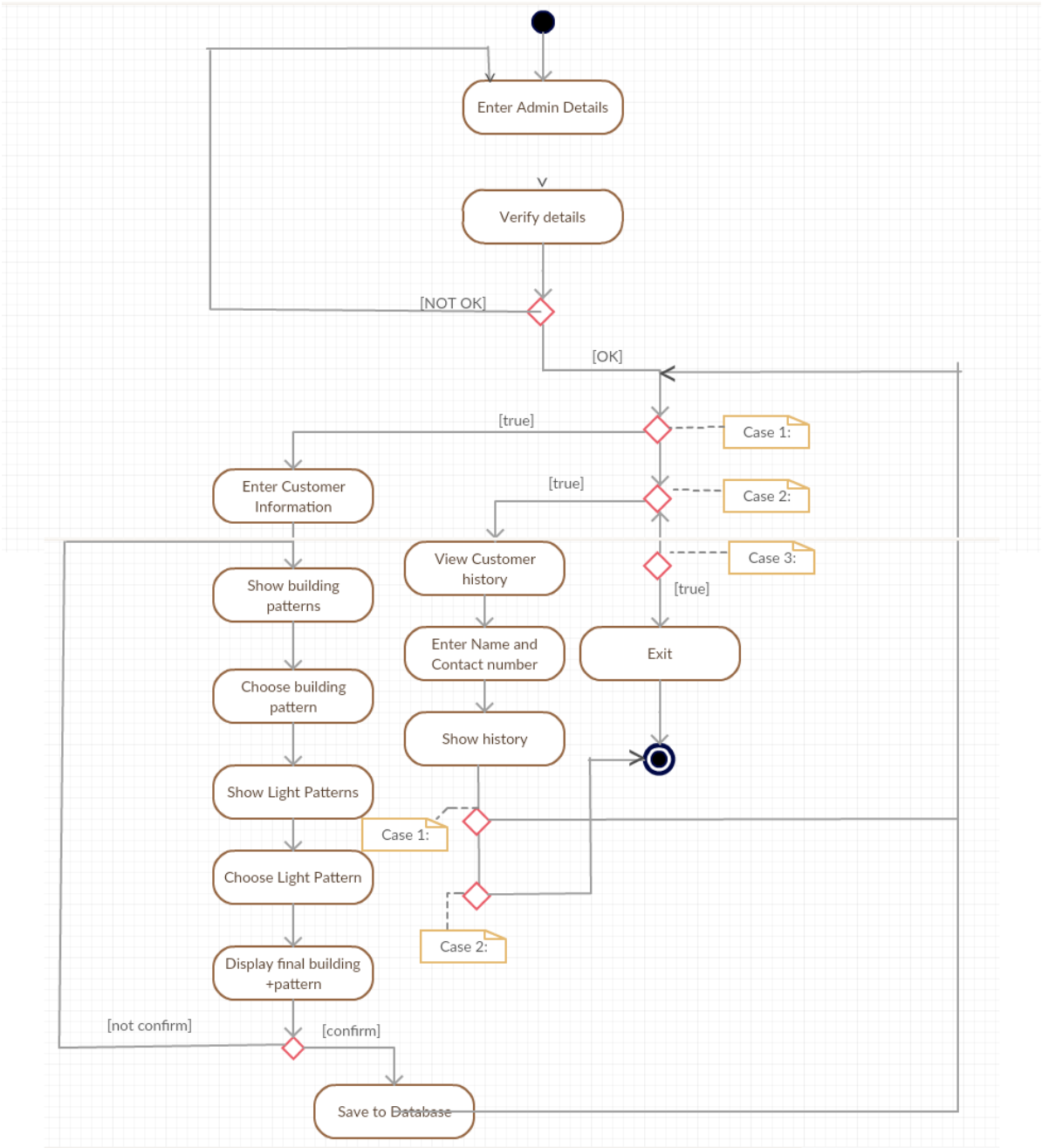
2.1.1.2 Class Diagram:



2.1.1.3 *Sequence Diagram:*



2.1.1.4 *Activity Diagram*:



2.1.2 Non-Functional Requirements

1. The system is secure and only initiated after administration login.
2. Once confirmed the user's selection is saved in database.

2.2 User Characteristics:

There are 2 types of users, the administration and the customers. They have different functions. The administration can view customer history. The customer can use the software only after the administration login. Customer can view and choose building types and light patterns associated with it.

3. Specific Requirements

3.1 Use case description

3.1.1 Login

Use Case Name	Login
Trigger	Admin wants to login to start the software.
Precondition	None
Basic Path	1. Start the program. 2. Enter the username and password. 3. System verifies the details from database.
Alternative Paths	None
Post Condition	Admin is logged in.
Exception Paths	User enters wrong admin details
Others	None

3.1.2 Simulate_design

Use Case Name	*Simulate_design*
Trigger	Customer wants to simulate lighting patterns on buildings
Precondition	Admin must be logged in
Basic Path	1. Enter customer information. 2. Select particular building pattern. 3. Select particular lighting pattern.
Alternative Paths	None
Post Condition	Selected light pattern is simulated on simulated building.
Exception Paths	Customer enters invalid option for buildings or light patterns.
Others	None