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| Capstone Project Document |

KARYWELL

Software Architectures Design

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# INTRODUCTION

## 1.1. Purpose

The Software Architecture Design Document provides a comprehensive architectural overview of the Karywell system offered by Karywell team. It present a number of different architectural views to depict different aspects of the system. It is intended to capture and convey the significant architectural decisions which have been made on the system.

The development team should read carefully this document to review the architecture of the system before develop. It would also be very helpful for the upgrade and maintain.

## 1.2. Scope

The Scope of this SAD is to depict the architecture design of the Karywell system create by Karywell team. Documents describing the elements and the most basic acts within the system to help the stakeholders can see the system overall.

## 1.3. Definitions, Acronyms, Abbreviations

|  |  |  |
| --- | --- | --- |
| **Acronym** | **Definition** | **Note** |
| **Karywell** | Super Shipper System |  |
| **SADD** | Software Architecture Design Document |  |
| **SRS** | Software Requirement Specification |  |
|  |  |  |
|  |  |  |

## 1.4. Overview

This SADD include the flowing subsection:

Section 2: Describes the use of each view in 4+1 views

Section 3: Describes the goal and constraint of architecture.

Section 4: Describes all the use case of system

Section 5: Describe how the system will be deployed.

Section 6: Describe the layers and subsystems of the system.

Section 7: Describe the choice of Architecture Design.

Section 8: Describe any aspects related to the quality of service attribute

# DESCRIPTION

This section depicts the architecture using the views defined in the “4+1” model as below:

Figure 1: View Model 4+1

**Logical view**

**Implementation view**

**Process view**

**Deployment view**

## Use case view

**Audience:** all the stack holder of the system

**Area:** Specific description of each use-case and their role in the system.

**Related Artifacts:** Use-Case Model

## Logical view

**Audience:** Designer

**Area:** Function Requirements: describes the design’s object model. Also describes the most important use-case realizations

**Related Artifacts:** Class diagram, Sequence diagram, Communication diagram

## Implementation view

**Audience:** Programmers

**Area:** Software components: describes the layers and subsystem of the application

**Related Artifacts:** Component diagram, package diagram

## Deployment view

**Audience:** Manager

**Area:** Topology: describes the mapping of the software onto the hardware and shows the system distributed aspects.

**Related Artifacts:** Deployment diagram

## Process view

**Audience:** Integrators

**Area:** non-functional requirements: describes the designer’s concurrency and synchronization aspects

**Related Artifacts:** Activity diagram

# ARCHITECTURE GOAL & CONSTRAINTS

## Technical Platform

The Karywell Web Application will be deployed onto Amazon Cloud Service(EC2).

This application will be deployed as a hybrid application that can run on Android and IOS platform.

## Communication

The mobile application and web application request to web service and get response as JSON objects.

## Security

- Information of admin data on server is secured.

- Information of store and shipper on server is secured.

## Reliability/Availability

- The application is available 24/7.

- Find the way to go to places of receive and place of delivery are at least 90%.

## Performance

* Time delay for find shipper who nearest with place of delivery is less than 60s.
* Time delay on web application for tracking state of shipper on map is less than 5m.
* Server can handle least 2000 clients concurrently.
* Other functions of server perform well while have many order running on application.

## 4.4 Maintainability

- Web application is easily to maintain without any crashes. Source code is readability, organized into groups of skeleton (modules) and complies with coding convention.

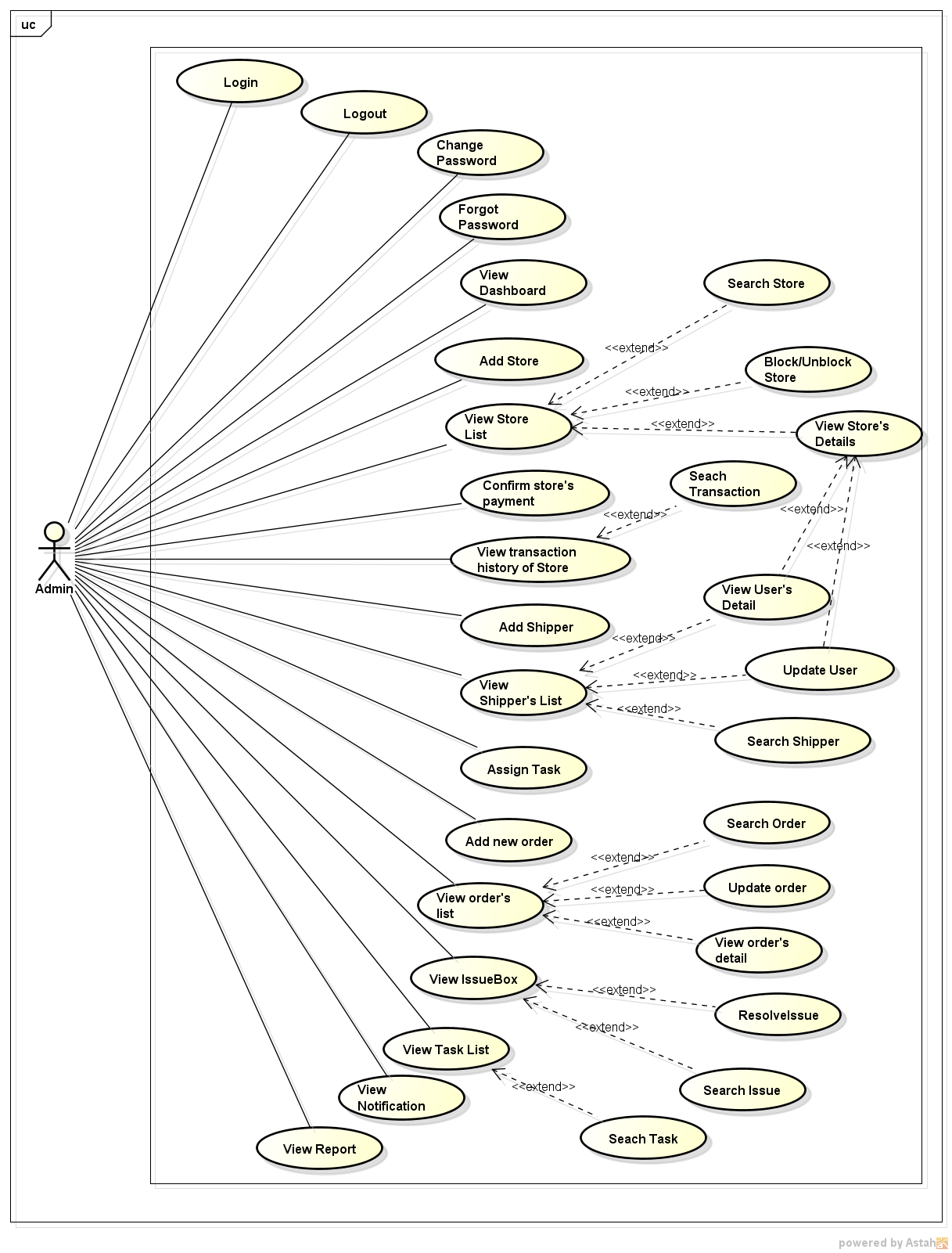
- Mobile application is easily to be updated and synchronize with Web application without any crashes. Source code is readability, complies with coding convention.

- System’s architecture has to be design to be easy to extend.

# USE CASE VIEW

This section list all use cases of Karywell system. Details on SRS

## Admin



*Figure 2. Use case view of Admin*

## Store

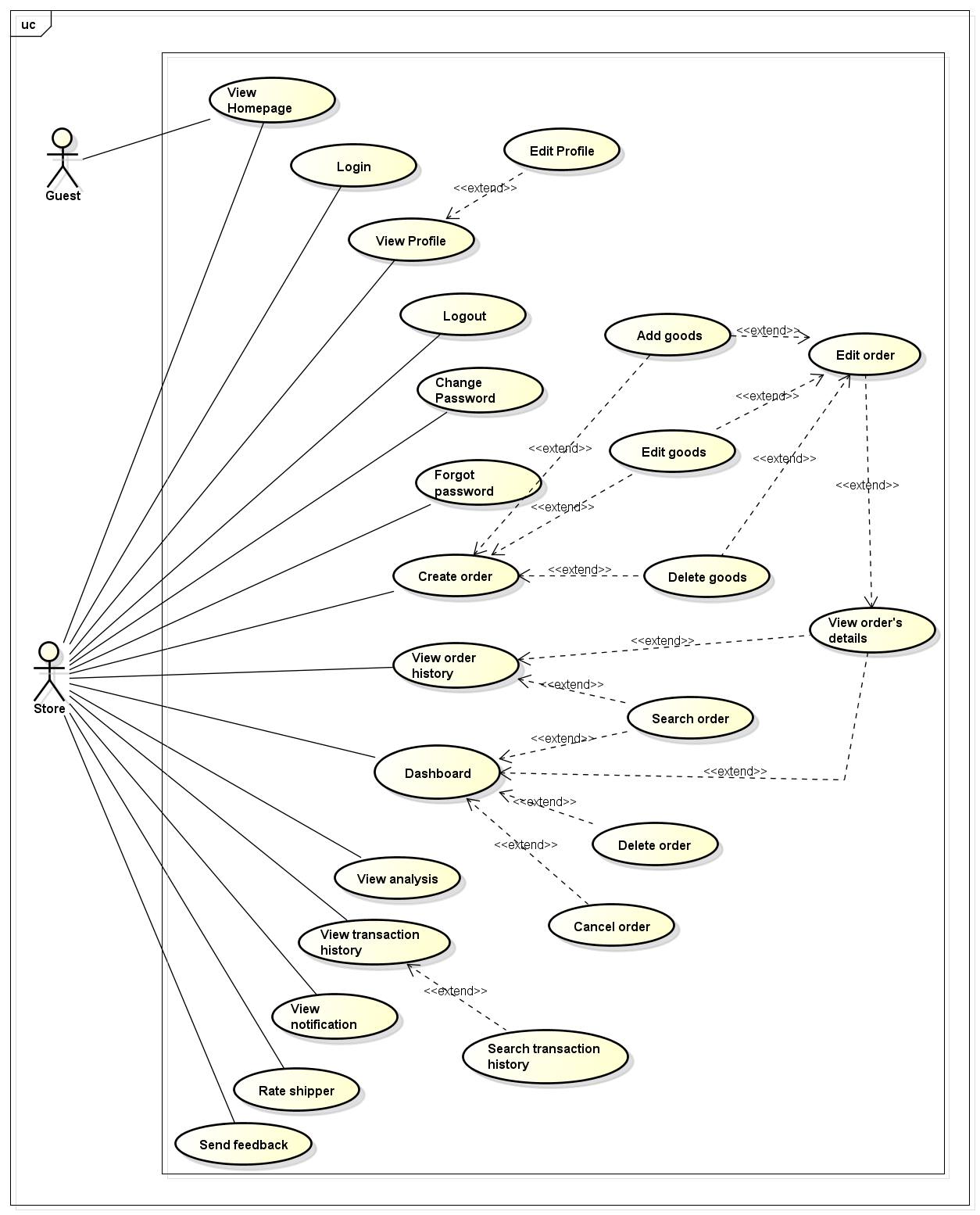


Figure 3: Use case view of Store

## Shipper

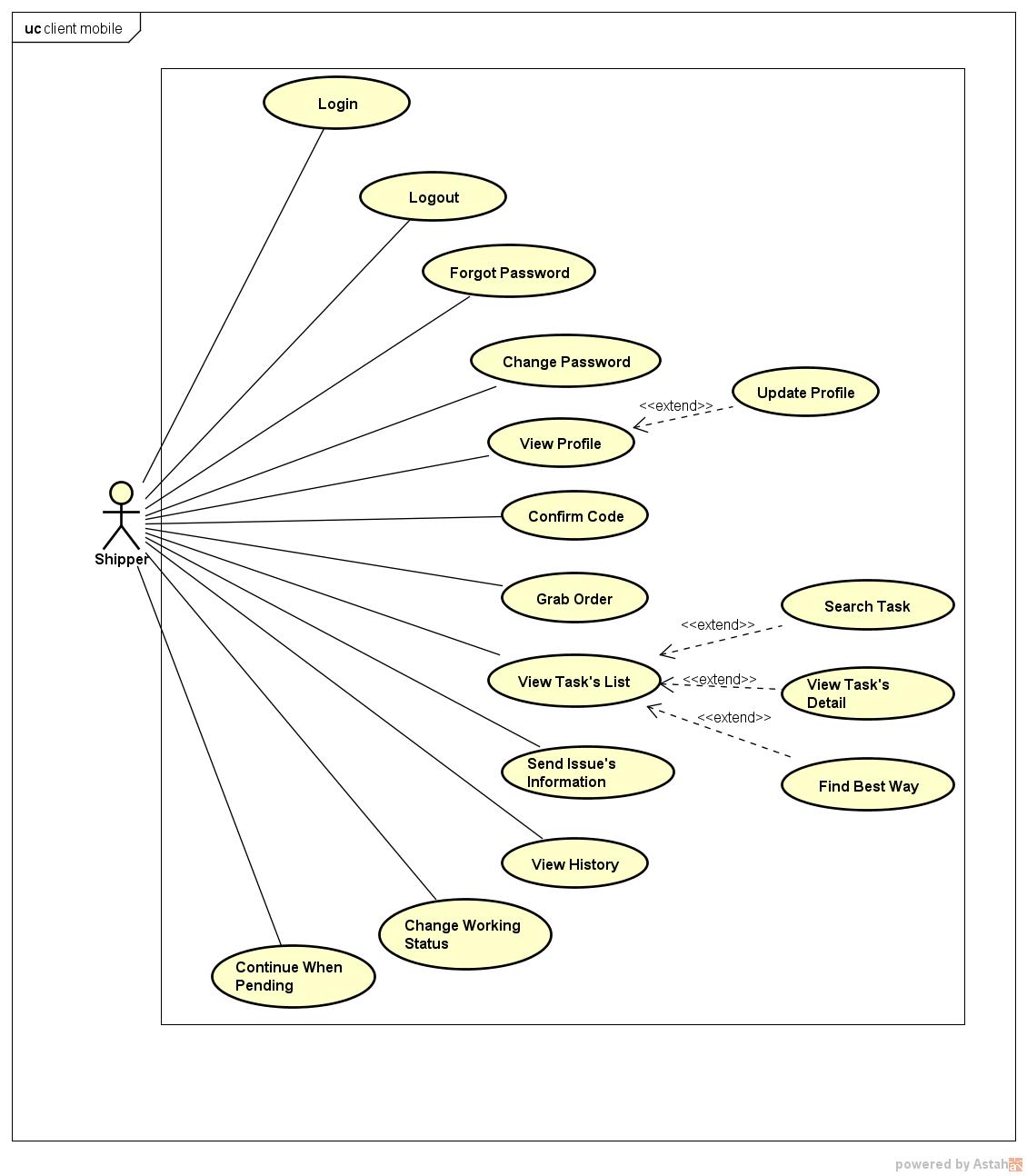
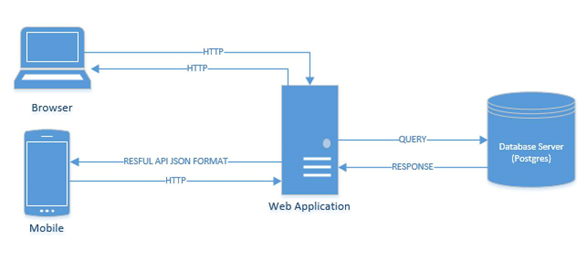
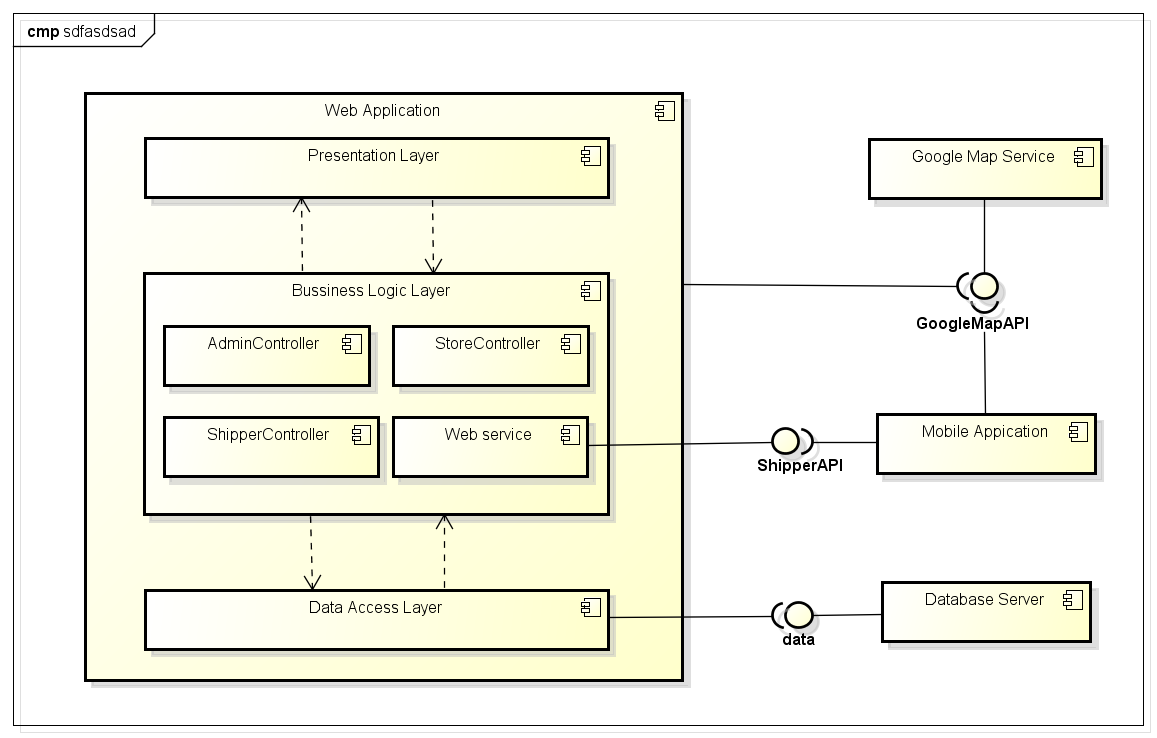


Figure 4: Use case view of Shipper

# DEPLOYMENT VIEW



# IMPLEMENTATION VIEW



# CHOICE OF ARCHITECTURE DESIGN

TODO

# QUALITY

* ***Performance:***

+ Karywell system includes three critical components that interacts with web service and creating a real-time system. Therefore, the system should ensure the continuous synchronization between the components.

+ Time delay for find shipper who nearest with place of delivery is less than 10s.

+ Time delay on web application for tracking state of shipper on map is less than 5m.

+ Server can handle least 2000 clients concurrently.

+Other functions of server perform well while have many order running on application.

* ***Reliability:***

+ The application is available 24/7.

+ Find the way to go to places of receive and place of delivery are at least 90%.

* ***Maintainability:***

+ Web application is easily to maintain without any crashes. Source code is readability, organized into groups of skeleton (modules) and complies with coding convention.

+Android application is easily to be updated and synchronize with Web application without any crashes. Source code is readability, complies with coding convention.

+ System’s architecture has to be design to be easy to extend.

* ***Security:***

+ Information of admin/ root admin / data on server is secured.

+Information of store and shipper on server is secured.