

COS 301 HighTech Team - SRS Document

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1 Introduction

In the modern plumbing industry, a continuous source of inconvenience arises for plumbers to log information on the geysers and components installed on various jobs by means of written material on a day-to-day basis. Considering this the goal of this project is to design a new database application system that greatly reduces the inconvenience of having to log information about installed geysers by taking advantage of the prevalence of mobile devices in the modern world. In order to do this, we will shift the logging of details from the paper-based method itself to a mobile application, detailed below.

1.1 Definitions, Acronyms

This section provides definitions of all items, acronyms and abbreviations to interpret the SRS document properly.

1. Certificate of Compliance - A certificate to prove that the geyser installation complies with regulation standards.
2. App - Application

2 User Characteristics

2.1 Intended users

There are different kinds of users that will be interacting with our system. The intended users of the software are:

Plumber- Geyser Installers

The most interactive part of the app consists of what the installer will be doing. The installer would be a user that is installing the geyser and associated parts, they require a fast and easy way to compile all related information files and images onto a database in order to streamline future adjustments and insurance claims.

Insurance Companies

Insurance companies will be able to be easily contacted in case of a claim and appropriate documents can be easily accessed or sent to the linked insurance companies. Insurance users will no longer have to find the documents needed to make a claim as these are stored online. Should a problem arise the insurance company or those in contact with them can be notified of a possible claim.

Homeowners

Homeowner characteristics include the need for streamlining between manufacturer of the geyser, insurance companies, and plumbers. This also includes ease of access to geyser information when combined with easily ac-

cessed plumbers who can advise if the homeowner seeks to find an issue with the geyser or repair it.

2.2 Constraints

- The homeowner may not edit information they do not have access to it.
- Insurance companies may not view data not associated with a claim.
- Only the admin can make changes.

3 Function Requirements

3.1 Use-case

- UC1** The plumber login with its credentials.
- UC2** The plumber scans the barcode that is placed on the geyser.
- UC3** The plumber can view the heap map.
- UC4** The plumber uploads hot water system images.
- UC5** The plumber uploads images of the house where the geyser is being installed.
- UC6** The plumber enters geysers details.
- UC7** The plumber enters his/her details.
- UC8** The plumber enters the home owners details.
- UC9** The plumber enters the insurance companies' details.
- UC10** The plumber uploads the Certificate of Compliance.
- UC11** The plumber updates the details if repairs are done on the geyser.
- UC12** The plumber can view a report (summary of the details entered).
- UC13** The home owner scans the barcode that's placed on the geyser.
- UC14** The home owner enters his/her credentials.
- UC15** The home owner can view the report of the installation of geyser.
- UC16** The home owner sends an email notification regarding the claim on geyser to the insurance company.
- UC17** The home owner receives a notification upon successfully sending an email to the insurance company.
- UC18** The home owner sends a query to the manufacturer of the geyser.
- UC19** The home owner receives a notification upon successfully sending a query to the manufacturer of the geyser.
- UC20** The home owner sends a query to the plumber.
- UC21** The home owner receives a notification upon successfully sending a query to plumber.
- UC22** The administrator receives push notification when updates are made by the installer.
- UC23** The administrator views the installation report.
- UC24** The insurance company login with their credentials in order to proceed.

3.2 Functional requirements

Authentication subsystem

1 The app shall provide authentication functionality.

1.1 The app should allow the users to scan barcode on the geyser in order to proceed.

1.2 The app should differentiate between the different types of users (installer, admin, land owner or insurance company) and only return data relevant to that specific type of user.

Data Capturing subsystem

2 The app shall allow various details to be captured after the installation of the geyser.

2.1 The app must allow the plumber to enter his/her details.

2.2 The app must allow the plumber to enter the Geyser Details

2.3 The app must allow the plumber to upload installation related images.

2.3.1 The app must allow the plumber to upload Hot water system images.

2.3.2 The app must allow the plumber to upload Certificate of Compliance.

2.3.3 The app must allow the plumber to upload images of the house where the installation of geyser was done.

2.4 The app must allow the plumber to enter Insurance company details.

2.5 The app must allow the plumber to enter home owner details.

Report subsystem

3 The app shall generate a report for various users.

3.1 The app should generate a report based on the details captured for the administrator.

3.2 The app should generate a report based on the details captured for the home owner.

3.3 The app should generate a heat map of geysers based on different criteria.

Notification Subsystem

4 The app shall support various notification functionality.

4.1 app should notify the admin if changes are made to the database.

4.2 The App should allow the Residence owner to send notification

4.2.1 The app should allow the Residence owner to email the insurance company regarding their claim

4.2.2 The app should allow the residence owner to send query to the manufacturer of the geyser

4.2.3 The app should allow the residence owner to send query to the plumber who installed the geyser.

4 Traceability Matrix

	Authentication	Data Capture	Report	Notification
Functional				
1.1	X	X		X
1.2	X			X
2.1		X		
2.2		X		
2.3		X		
2.3.1		X		
2.3.2		X		
2.3.3		X		
2.4		X		
2.5		X		
3.1			X	
3.2			X	
3.3			X	
4.1				X
4.2		X		X
4.2.1				X
4.2.2				X
4.2.3				X
Quality				
QR1		X	X	
QR2		X		
QR3	X			X
QR4	X	X	X	
QR5		X	X	
QR6	X	X		
QR7			X	
QR8		X		

5 Quality Requirements

QR1: Performance

- (a) - The app shall check how many geysers are installed a day. This allows the app to update the heat map with additions of new geysers.
- (b) -The app should upload the information to the database within 20 seconds of being connected to the internet.

QR2: Reliability

- (a) -The information will be stored locally on the phone until it is uploaded to the database on the server where it will have the ability to be accessed.
- (b) -The database shall keep all information of every geyser(CRUD), in case of a server failure, all the information should also be duplicated to another storage area for redundancy.

QR3:Security

- (a) -Since information stored on the database needs to be confidential and comply with the popi act the database needs to be secured by password access to ensure security.
- (b) -Incorrect credentials entered need to alert the admin(by sending notification) that someone is trying to access the application without permission.
- (c) -Access permissions for particular system information shall only be changed by the system administrator.

QR4: Scalability

- (a) -The app server must be able to scale the amount of computing power it uses depending on the amount of devices currently connected, so it must be able to make more processing power available if the number of connected users rise above a certain.

QR5: Availability

- (a) -The app shall allow users the enter data from any location and upload whenever they have internet signal
- (b) -The app shall show users the locations of geysers with the corresponding filter options on a heatmap to show certain geysers of various attributes for example manufacturer of the geyser, model,size etc.
- (c) -The system shall be available for 99 percent of the time.

QR6: Maintainability

- (a)- The database will allow an admin user to maintain all information on the database incase changes need to made.
- (b)- The app will be created in a modular fashion to allow changes to be made to modules without affecting the whole app.

QR7: Monitorability

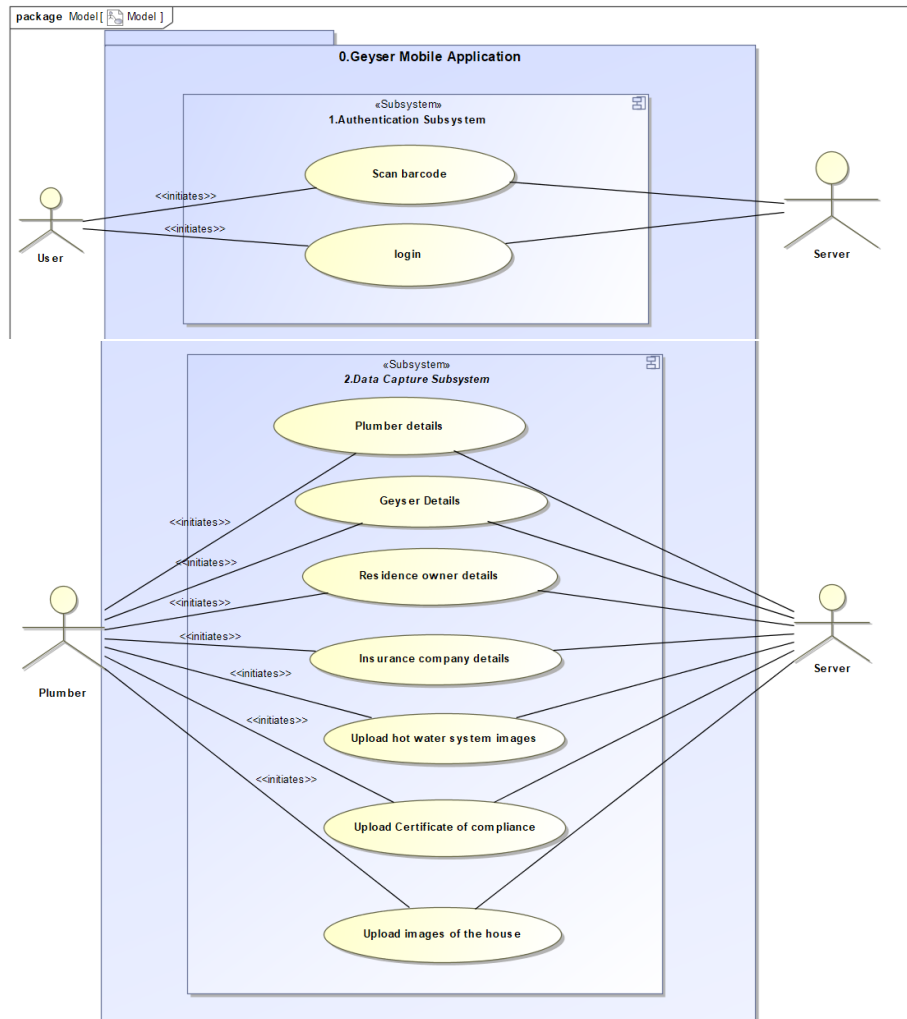
- (a) -The app will make use of multiple heat map views to display different details of geysers in the area.

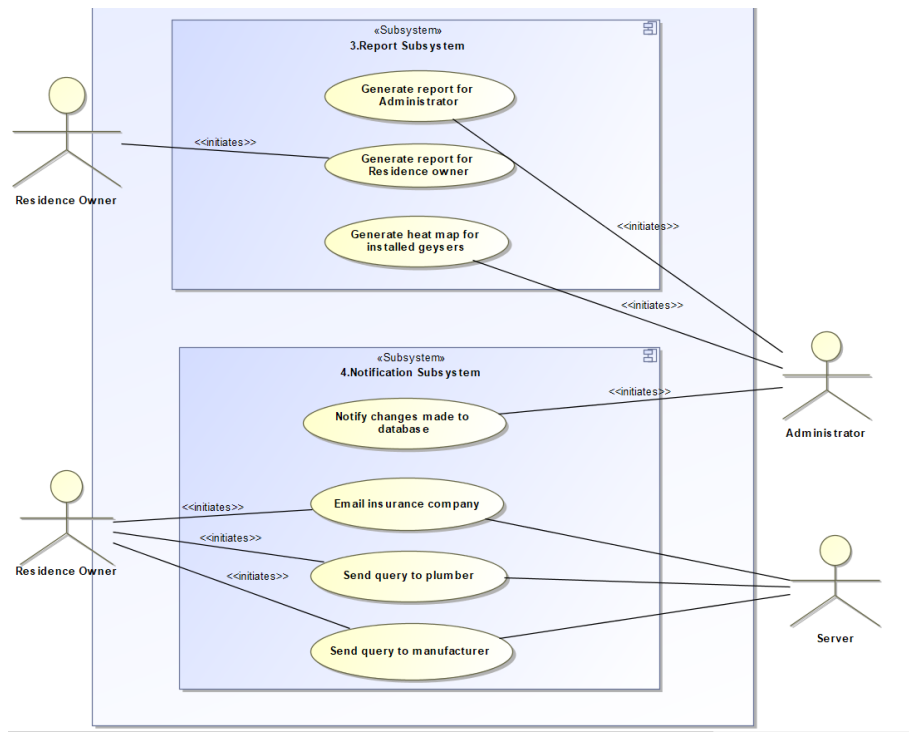
QR8: Usability

- (a) -App users who want to enter information or edit information shall be able quickly and easily to to accomplish any task. -the app shall process actions in less than 30 seconds

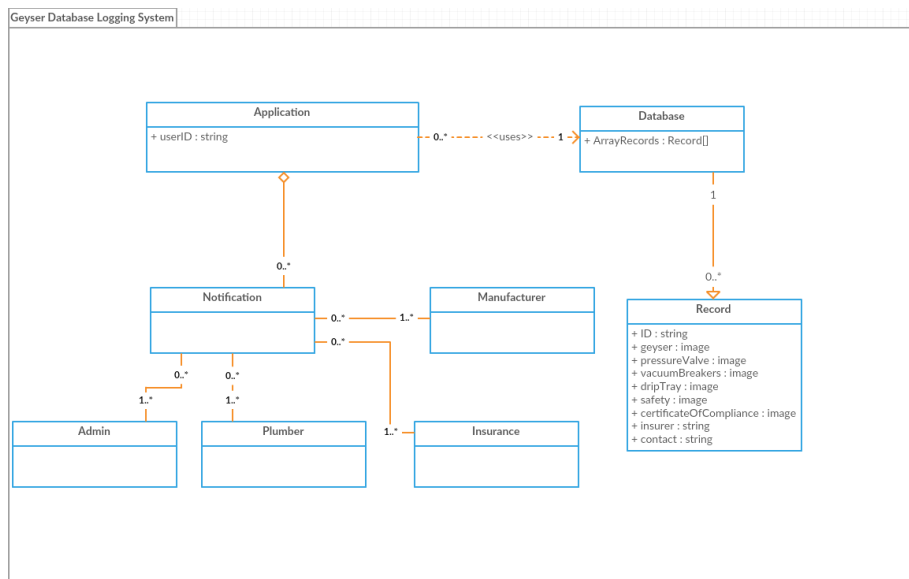
6 Diagrams

6.1 UML use case diagrams





6.2 Domain Model



7 Conclusion

The new way of loading geyser installation details need to comply with the current direction in which reporting is done all over the country - into the mobile, portable, personal sphere. With the system specified in this document, the same old logging functionality is shifted into this new sphere - as well as gaining some improvements.

In conclusion the proposed system will change the way plumbers interact with the logging of information. More specifically it will focus on evolving the way plumbers and homeowners submit their information by moving towards a more mobile approach allowing users to upload images and type out legible data. Interfaces will be created on Geyser24(mobile app) and will speed up the process of uploading of info and allowing a user to simply enter their geyser number and display the generated report with all major details included.

In turn the process times will greatly be reduced as well as increasing security by encrypting important data. Geyser24 will also allow users to log queries about their geyser to receive help faster. Geyser24 will change the plumbing industry as well as the household as it will provide the fastest and easiest way to log issues and keep track of geyser information.

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