Table of Contents

**1. Introduction2**

1.1 Purpose2

1.2 Intended Audience and Reading Suggestions2

1.3 Project Scope2

1.4 References3

**2. Overall Description4**

2.1 Product Features4

2.2 User classes and Characteristics2

2.3 Operating Environment2

**1. INTRODUCTION**

**1.1 PURPOSE**

The purpose of this document to build a distributed, low-cost mobile system to estimate the condition of road surfaces.

**1.2 INTENDED AUDIENEC AND READING SUGGECTIONS**

This project is a prototype for the Distributed Road Network Monitoring System. This has been implemented under the supervision of the supervisor. This project is useful for the monitoring of the road network and as well as to the system administrators.

**1.3 PROJECCT SCOPE**

The purpose of the distributed road network monitoring system is to ease road detection and to create a high-level visualization of the collected data for system administrators. The system is based on a relational database with its data handling and data storage functions. We will have a database server supporting hundreds of clients. Above all, we hope to provide a comfortable user experience along with the best pricing available.

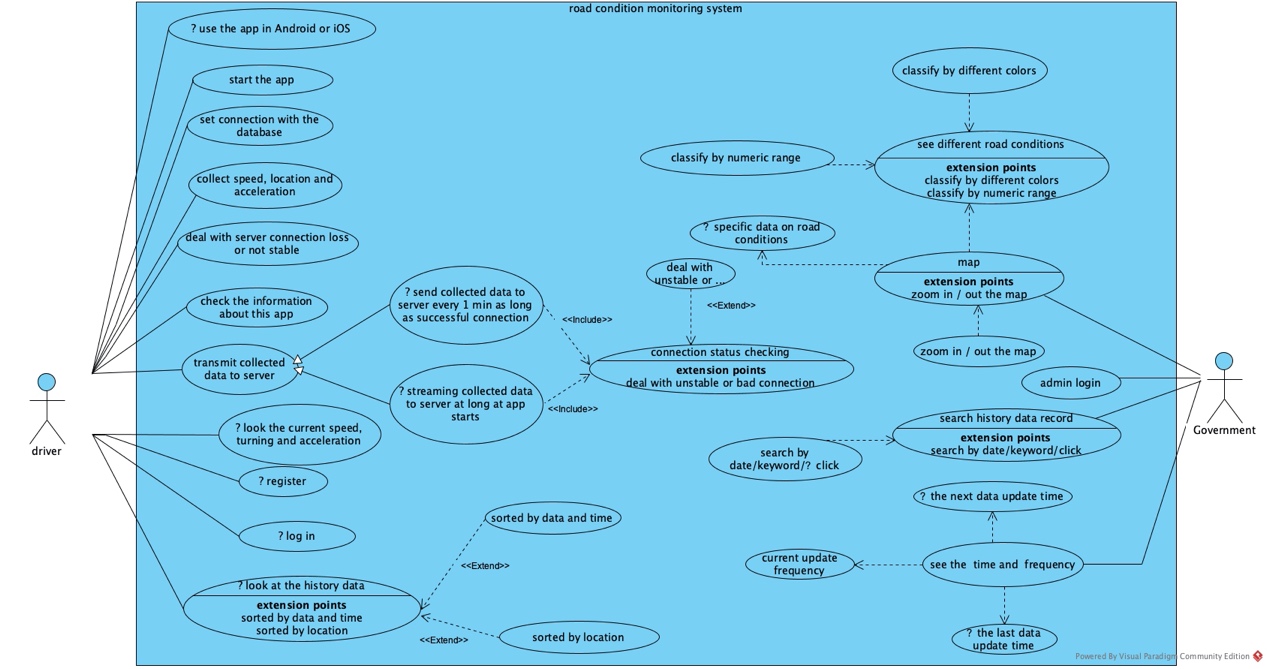
**1.4 REFERNECES**

* Singh, G., Bansal, D., Sofat, S., & Aggarwal, N. (2017). Smart patrolling: An efficient road surface monitoring using smartphone sensors and crowdsourcing. Pervasive and Mobile Computing,40, 71-88.
* Forslöf, L., & Jones, H. (2015). Roadroid: Continuous road condition monitoring with smart phones. Journal of Civil Engineering and Architecture,9(4),485-496.

**2. OVERALL DESCRIPTION**

**2.1 PRODUCT FEATURES**

The major features of road network monitoring system as shown in below:



Usecase1 diagram draft

Usecase1 specification:

Name: check the road condition

Purpose: check the road surface conditions by statistical information

Precondition: admin is login

Base path:

1.open the map

2. see the map of the place monitored (e.g. UNNC campus)

3. zoom in or zoom out the map

4. see the representation of different road conditions with a numeric range and different colors

5. see the data update time and the last update time and update frequency

6. focus the cursor on certain part of sign of the road on the map

7. see the current specific data on the box turning up

8. click on certain part of sign of the road on the map

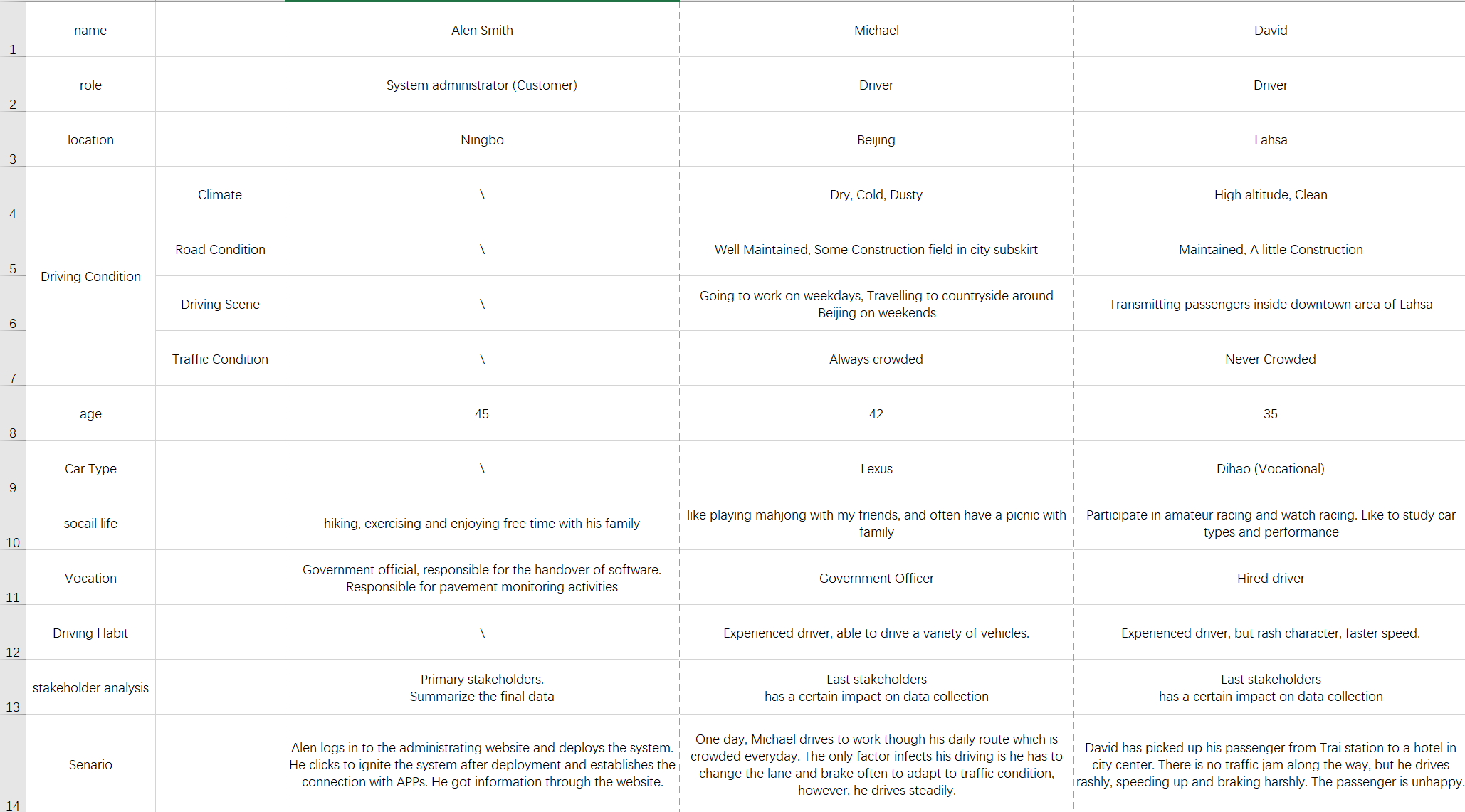
9. see the history data records of this part of the road

10. click the searching button.

11. search for the data through date or keyword

**2.2 USER CLASS and CHARACTERISTICS**

Some personas and scenarios of road network monitoring system as shown in below:





**2.3 OPERATUING ENVIROMENT**

Operating environment for road network monitoring system is as listed below.

* distributed database
* client system: Flutter
* server system: Python/Django
* App operating system: iOS + Android
* database:
* platform: java