

Intelligent Low-Altitude Air Traffic Management System

Group 30-18

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Problem Statement:

With the increase number of low altitude aircrafts used in deliveries, it became necessary to have a management system that puts the down sides such as the increase number of collisions, energy waste and delivery costs into consideration.

Solution:

Create a software that allows low altitudes aircrafts users to analyze different scenarios and conclude the best cases that reduces the disadvantageous in deliveries. For example, placing a warehouse in a strategic location that could eventually reduce the cost of operation for drones.

Intended User and Uses:

- Delivery companies such as Amazon Air Prime.
- Transport companies such as Uber Elevate that plans to develop autonomous flying cars.
- Any other companies that wish to use it for educational purposes.

Most relevant standards used:

- Standard for consumer drones: privacy and security
- IEEE recommended practices on software reliability

Engineering constraints:

- The display system works best with Google Chrome
- Fixed altitude assumption that leads to a 2D simulation software

Technical details:

Languages:

-Back-End: Java & JavaScript

-Front-End: HTML

Development Tools:

-Google Maps APIs

Functional Requirement:

- Display relevant flight information that is useful for analysis, departure time of aircrafts, next in line demands, average waiting interval and number of aircraft.
- Demands will not exceed the boundaries given by the user, such as locations and number.
- Aircrafts allocation is based on the next shortest available time or the closest warehouse.

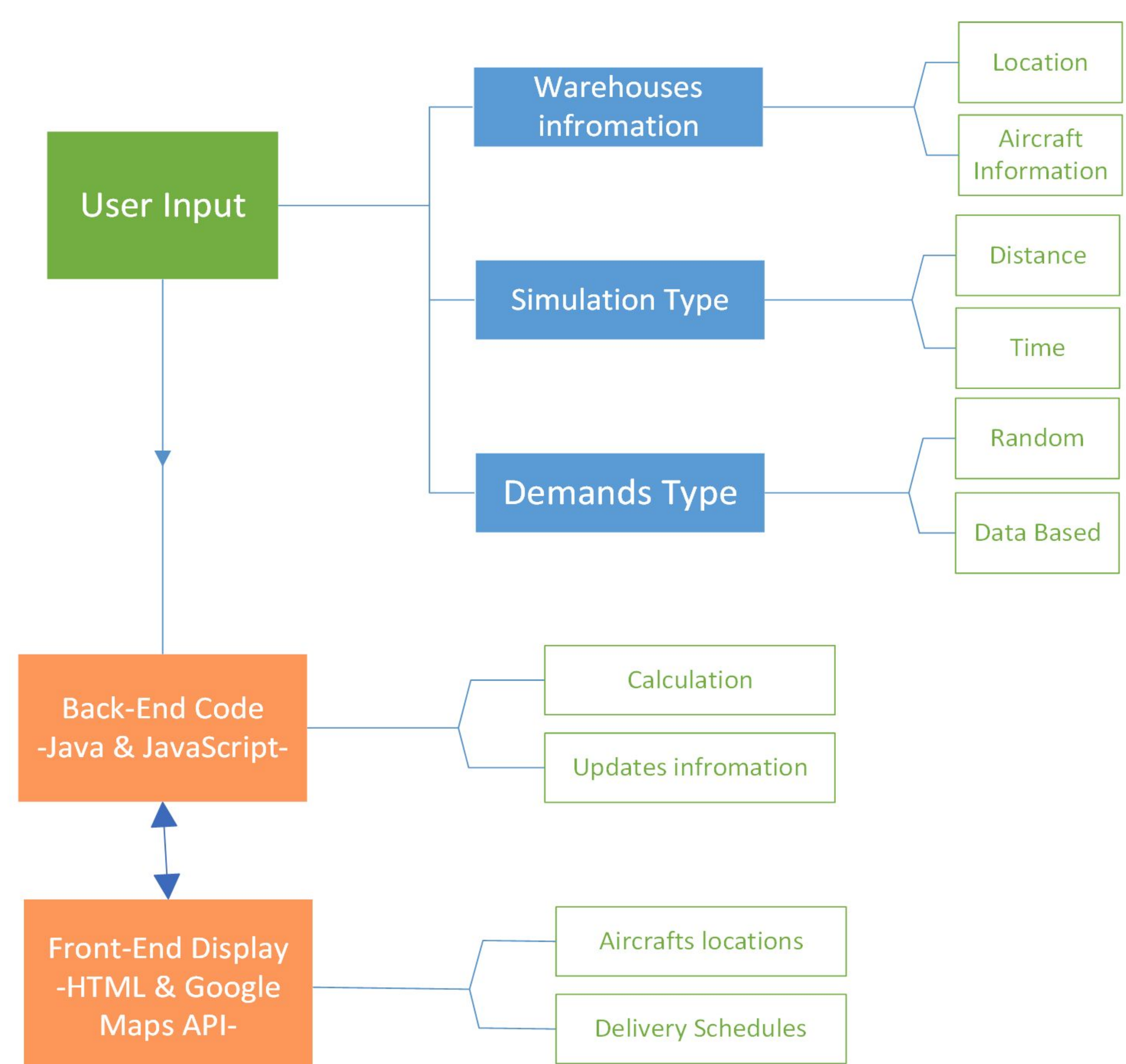
Non-Functional Requirements:

- Display should not lag and crash when in operation.
- Display can be zoomed out/in anytime.

Operating Environment:

- Operating system that run Java code and Chrome browser.

Design Approach:



Final product:

