Spatial Crowdsourcing for Dynamic Settings

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service 24.

Introduction

Problem Statement:

- *N* workers with varying skill sets have provided geospatial and availability data
- Possible clients have *M* tasks requiring workers with those skill sets

Solution: Develop a client/server system to algorithmically assign workers with matching skill sets to tasks submitted by clients

Technologies Used

- React & React Native
- Spring Boot, Mapbox
- MySQL, Gitlab
- Java, Javascript
- VsCode, Intellij
- Postman, JUnit

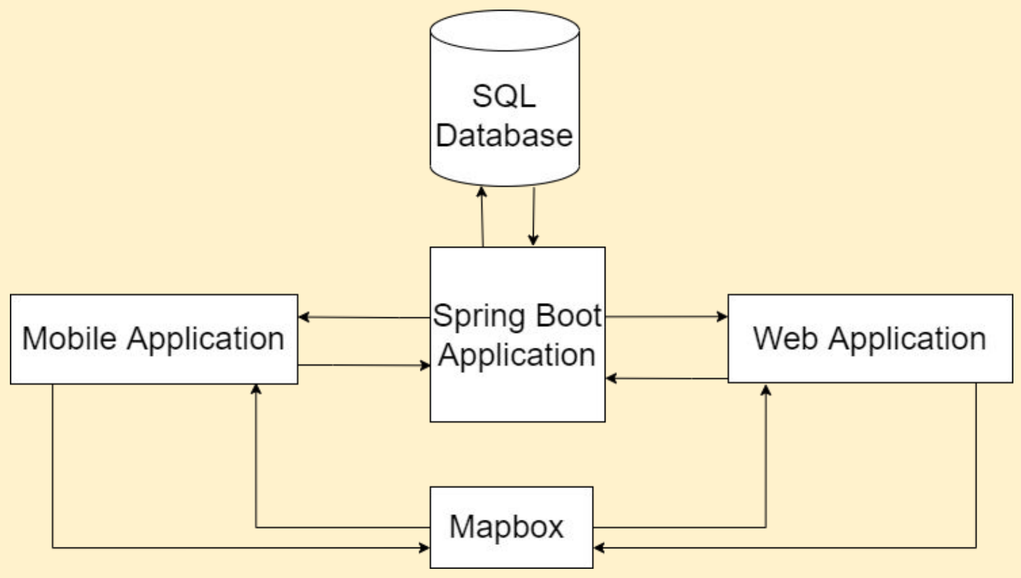
Testing

- Postman
- Mockito
- JUnit
- UI Acceptance Testing
- JMeter
- Database Module Testing

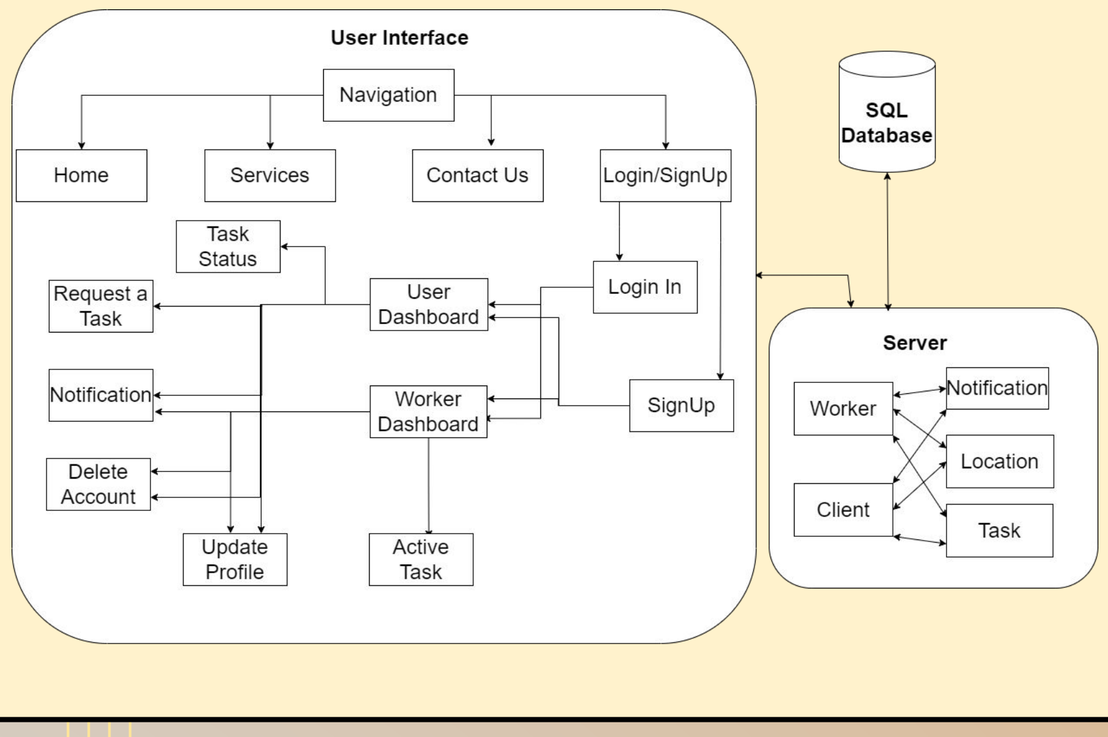
Intended Users & Uses

- Product has many potential applications
- Clients with tasks requiring specific skills
- Workers that match a task's required skill set
- Our use case generally centers around handiwork skills such as:
  - Electrician
  - Plumbing
  - Landscaping

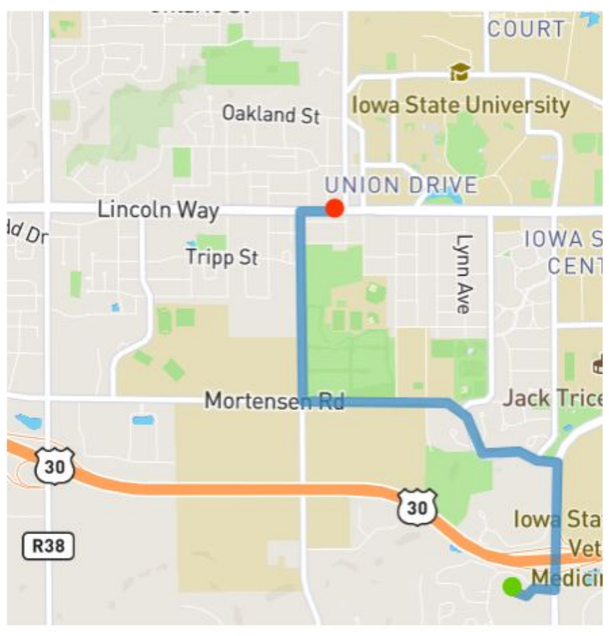
Architectural Overview



Block Diagram



Active Task



User Location Worker Location

Job Title: Service
Job Description: Fuse
Service Address: The Iowa Stater Restaurant, 2100 Green Hills Dr, Ames, Iowa 50014, United States

Job Status In-progress

Update Status

Standards

- IEEE Std 1012, Standard for Software Verification and Validation
- IEEE Std 1063, Standard for Software User Documentation
- IEEE Std 1219, Standard for Software Maintenance
- IEEE Std 1228, Standard for Software Safety Plans

Constraints

- Limited budget
- Time limit (completed by end of semester)
- Privacy of user data
- Accurate visualization of location on map
- Some users need to provide location data

Request Status

Task Status: In-Progress

Service Details

Title: Service

Description: Fuse

Address: The Iowa Stater Restaurant, 2100 Green Hills Dr, Ames, Iowa 50014, United States

Worker Details

Username: Alex

Email: ale@gmail.com

Phone Numeber: 6769767777

Wage: $10

Functional Requirements

- Appropriate user permissions granted
- Optimal task assignment
- Scalable application
- Updates in real time
- Clients can set preference of task assignment
- Workers can select applicable skills

Non Functional Requirements

- Accessible through Mobile/Web
- Worker security & privacy
- Extensible design
- Clean code for future maintainability
- Intuitive User Interface
- Data security