Interactive Evaluation of Shortest Path Methods

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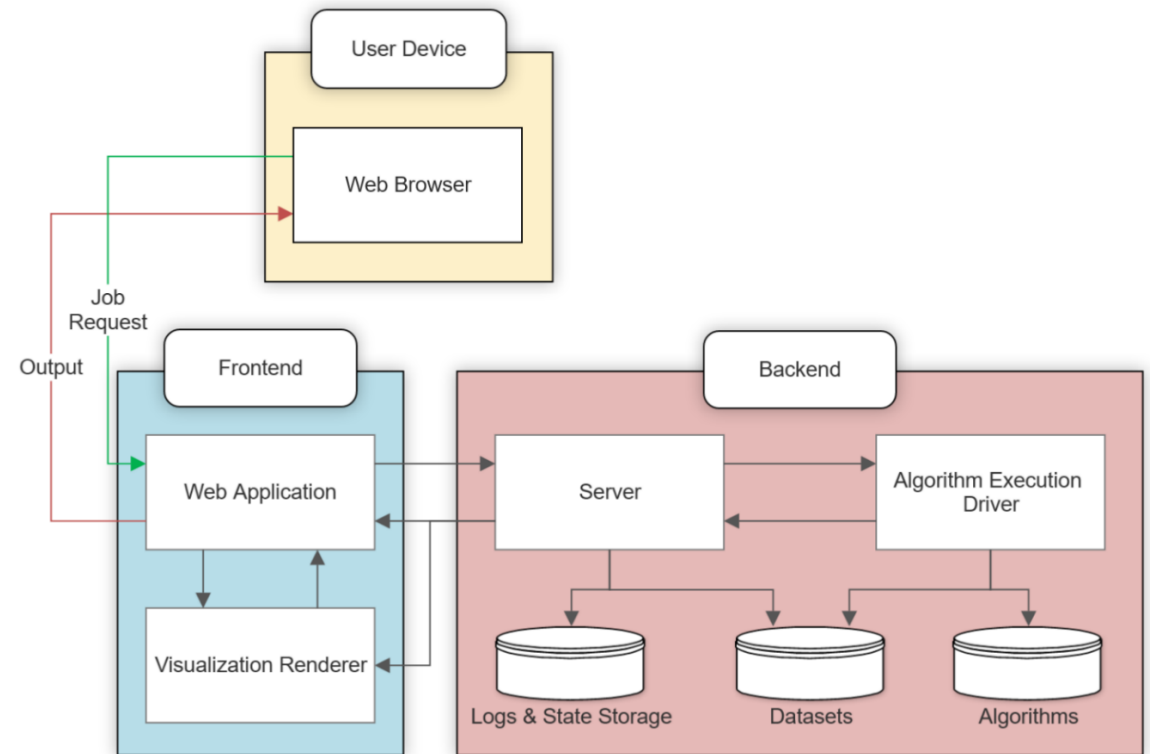
Unit Testing

Frontend Summary:

- UI and Login Functionality

- Visualization Renderer
    - Graphology
    - MapBox

Backend Summary:

- Algorithm Execution Driver(AED)

- Algorithms

- Logging & State Storage

Interface Testing

Frontend Summary:

- Login & Registration System
- Algorithm Selection/Data Upload
- Algorithm Execution Metrics
- Graphing/Mapping Visualization

Backend Summary:

- REST API Endpoints
- Persistence Layer
- AED Controller

Integration Testing

Execution Phases:

- Login Functionality & Algorithm Execution Metrics
- Algorithm Selection/Data Upload and Algorithm Execution Metrics
- Algorithm Execution Metrics and Visualization Renderer
- Login Functionality and Visualization Renderer
- API Endpoints & Persistence Layer Integration
- API Endpoints & AED Controller Integration
- AED Controller & Persistence Layer Integration
- End-to-end Backend Integration

System & Regression Testing

System Summary:

- User Algorithm & Dataset selection

Regression Summary:

- Additional Algorithms & Datasets

Requirements	Unit Tests on…	Interface Tests on…	Integration Tests on…
Availability of multiple algorithms and datasets	Algorithm Execution Driver	Algorithm Execution Driver Controller	AED Controller and Persistence Layer Integration
Provide correct measurements for runtime	Algorithm Execution Driver; Algorithms	Algorithm Execution Driver Controller	Algorithm Selection/Data Upload and Algorithm Execution Metrics Integration
Distinguish algorithms based on edge weights	Algorithms	--	--
User can select datasets and algorithms to test	UI and Login Functionality; Algorithms	Algorithm Selection/Data Upload	API Endpoints and Persistence Layer Integration
Generate informative visuals; allow for comparison & export	UI and Login Functionality; Visualization Renderer	Algorithm Execution Metrics; Visualization Renderer	Algorithm Execution Metrics and Visualization Renderer Integration

Acceptance & Security Testing

Acceptance Summary:

- Sprint Integration & Client Feedback

- Criteria
    - UI Response Time
    - UI Component

Security Summary:

- HTTPS & SSL Certification