Augmented Reality (AR) Navigation System for Commercial Spaces

Software Projects - Group 14

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Motivation

- Lack of maps and signage in museums.
- Old technology currently in use, e.g. portable audio guides
- Various applications to other scenarios, e.g. supermarkets or libraries.

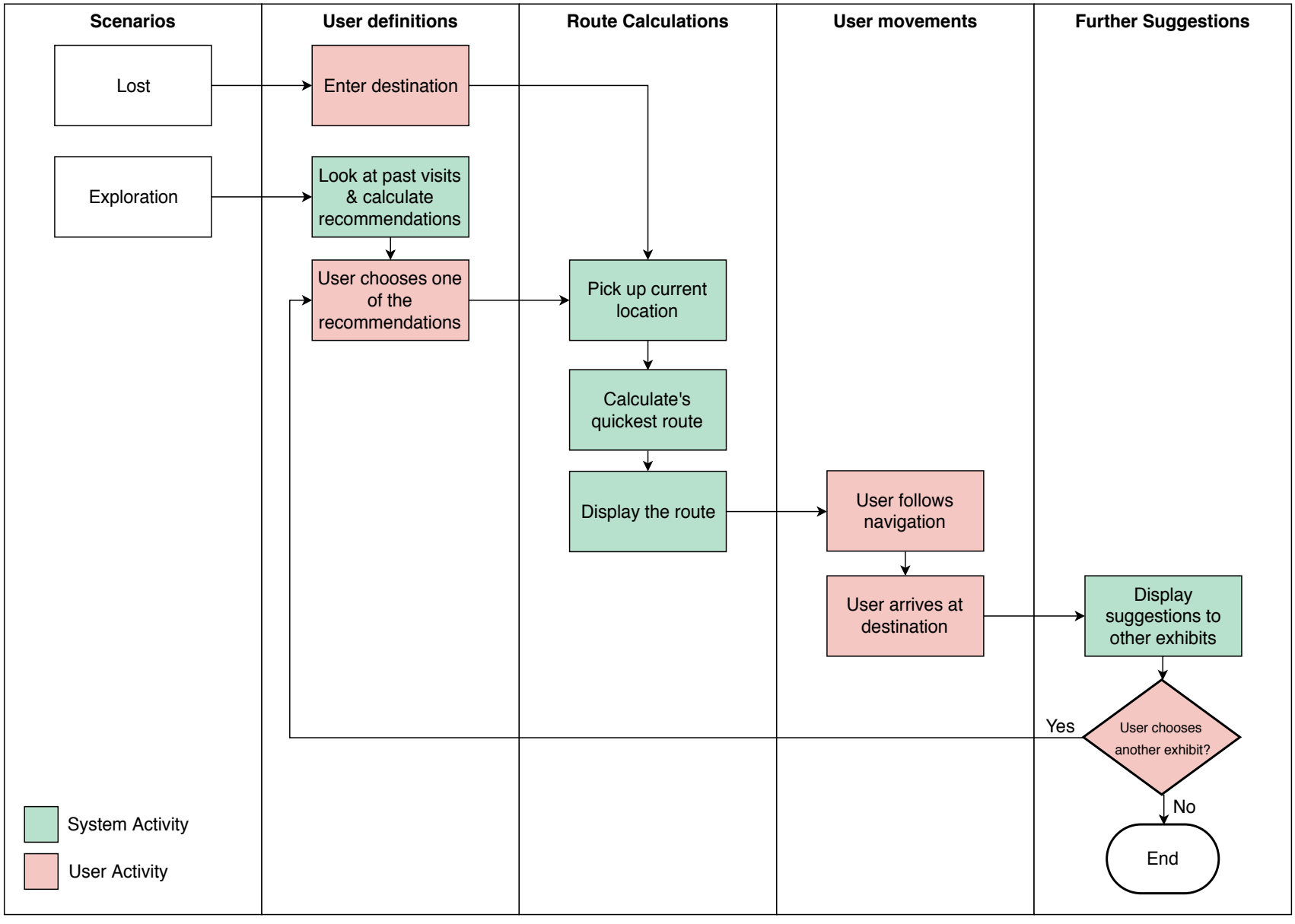
Scope

- Display navigational routes in real-time.
- Calculate the shortest route to the user specified location.
- Use AR to enhance user navigation routing.

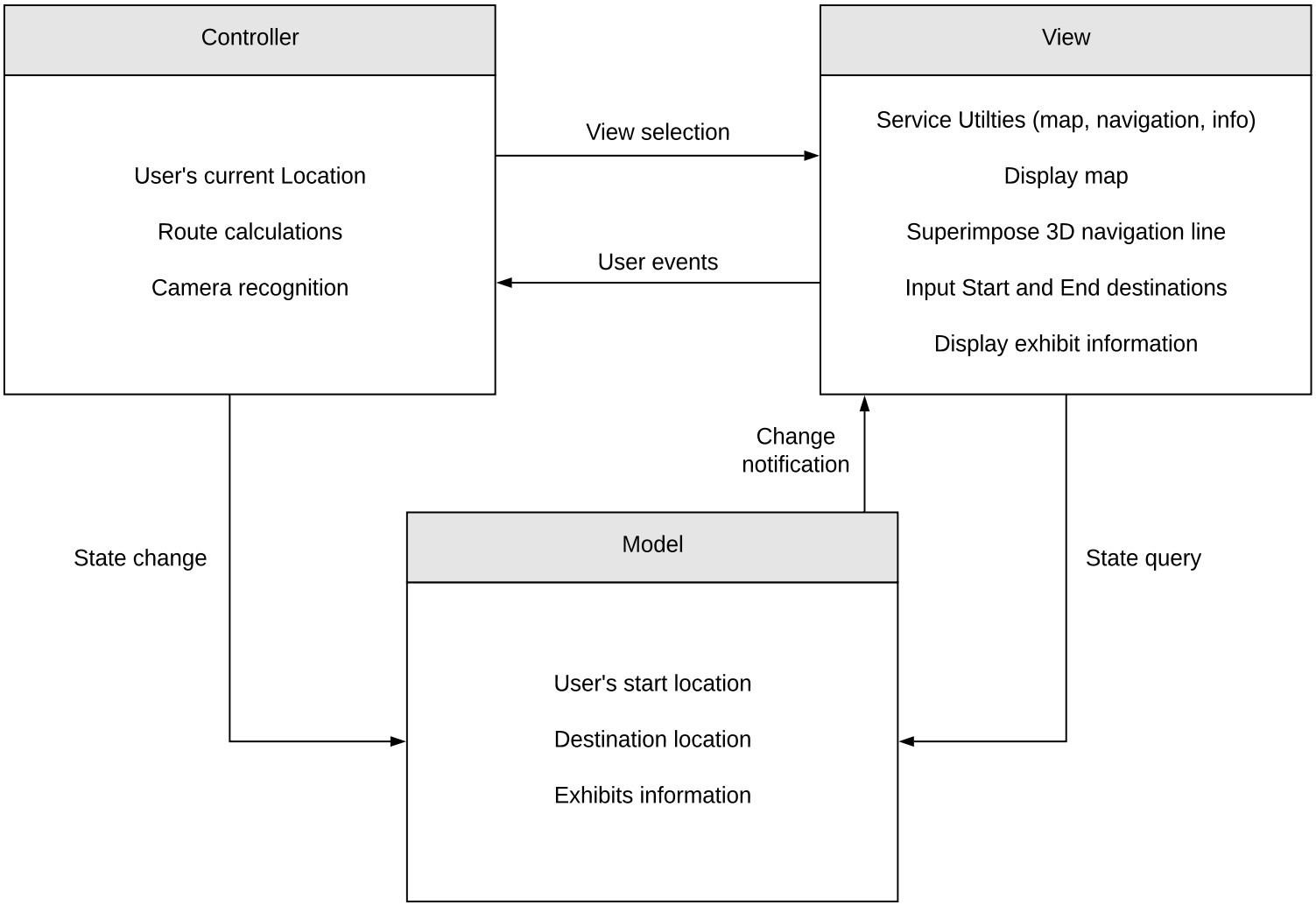
Design

- Android Prototyping
- User flow diagrams
- Model-View Controller

Use Case Model



Model-View Controller



Development Process & Testing

- Used Agile/Scrum instead of Waterfall
- 4 Sprints Conducted
- TDD approach
  - Unit
  - Integration
  - Regression
  - Performance & Stress
  - User Acceptance (UAT)

Outcomes

Sprints Conducted

- Arduino hardware construction and Bluetooth
- Navigation using A* path-finding algorithm
- AR: Rendering objects on screen

Evaluation

- High technical standard in the back-end
- Very "agile" in moving things between sprints to accommodate changes
- Good feedback from industry professionals and users
- Executed plans as of our proposal according to stakeholders and user requirements

Questions?