MuseumMate

Team 7

John Culley, Kai Imery, Kwadwo Osafo, Ananth Sanjay, Yangyang Zhang

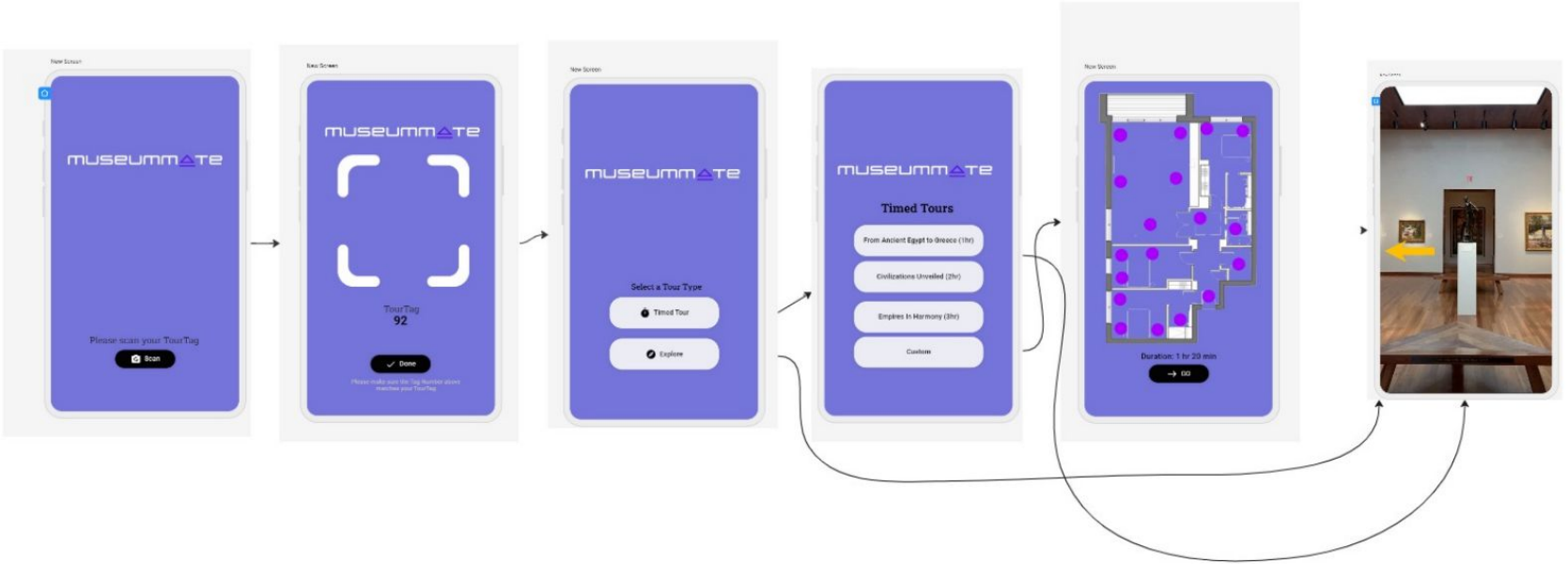
Problem Statement

- Museums are crowded and hard to navigate
  - Bottlenecks, popular exhibits, not optimized routes
- Exhibits don't provide enough engaging and informative information
  - Limited details, Limited forms of providing information
- Museums are not always accessible to people
  - Limited tools for people who are auditory and visually impaired, small text on exhibits

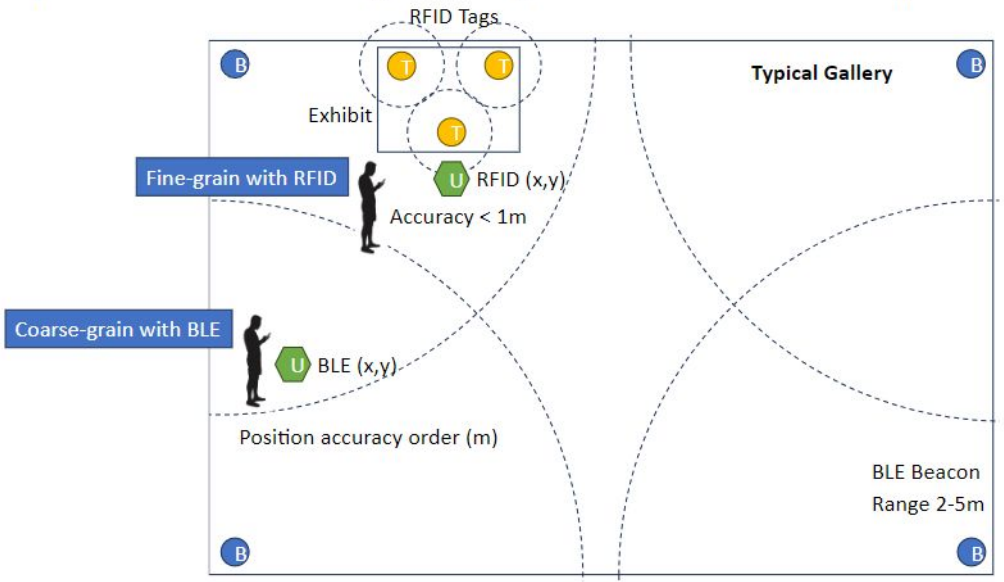
Proposed Solution

- Incorporate BLE sensors into user devices to passively detect BLE device transmissions.
- Utilize RFID tags on exhibits for unique identification and user location tracking.
- Mobile application displays exhibit-related media and information based on RFID scans, and provides routing guidance within the museum.
- Database stores information from scanned RFID chips, associating it with specific exhibits.

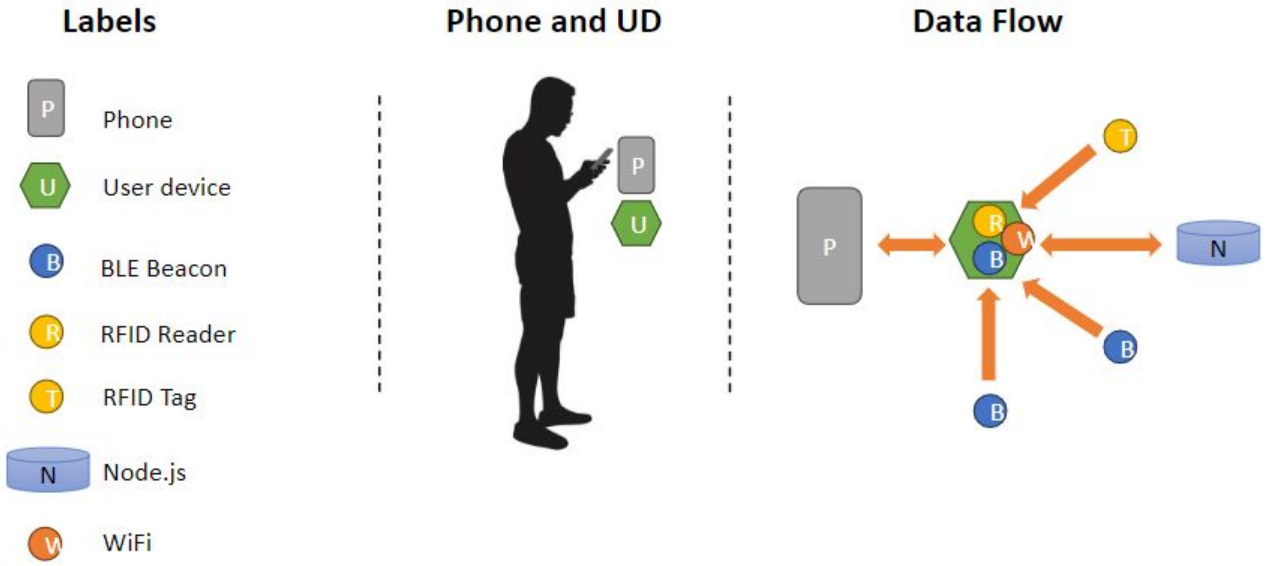
Visualization



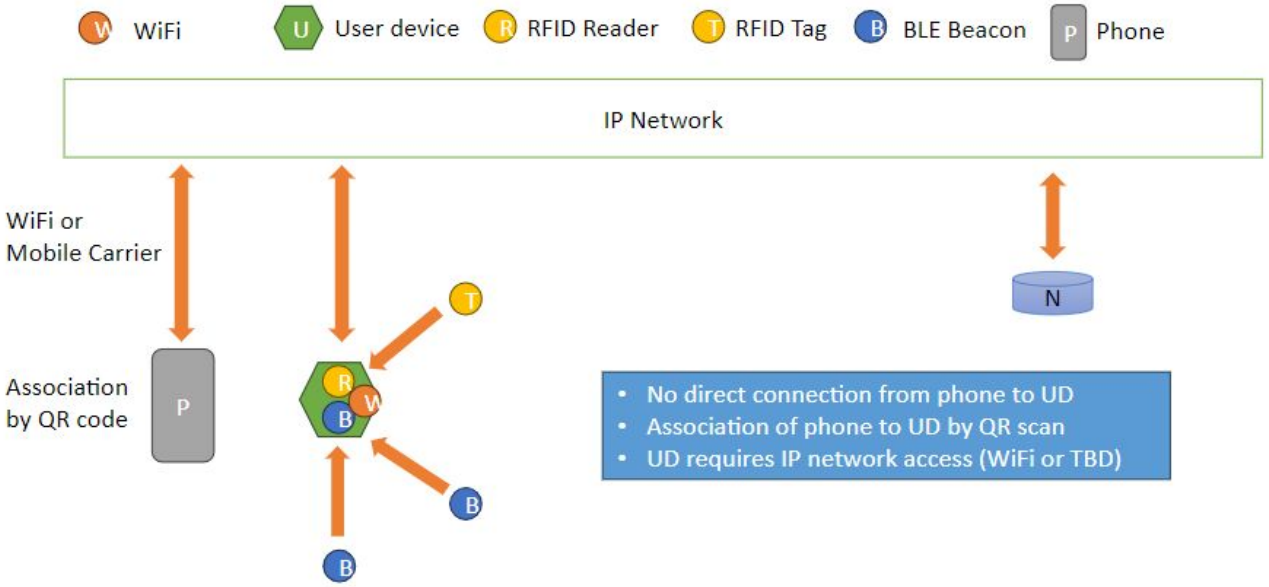
Visualization cont'd



Visualization cont'd



Visualization cont'd



Mobile Navigation App

Functionality

- Displays multimedia content (audio, video, text)
- Provides navigation using museum maps (multiple floors)
- Offers turn-by-turn or arrow-based guidance
- Computes shortest paths and provides route guidance
- Supports web-based and native app interfaces

Requirements

- Route calculation time: < 3 seconds
- Map display time: < 3 seconds
- Navigation changes: < 2 seconds

Competing Technologies

Navigine

- Offers museums an indoor navigation system which allows users to navigate, but does not take congestion into consideration

Mapsted

- Uses an advanced algorithm to help users navigate in indoor spaces using their smartphones and no additional hardware

Questions?