Implementation of Proximity based services

Using the beacon technology

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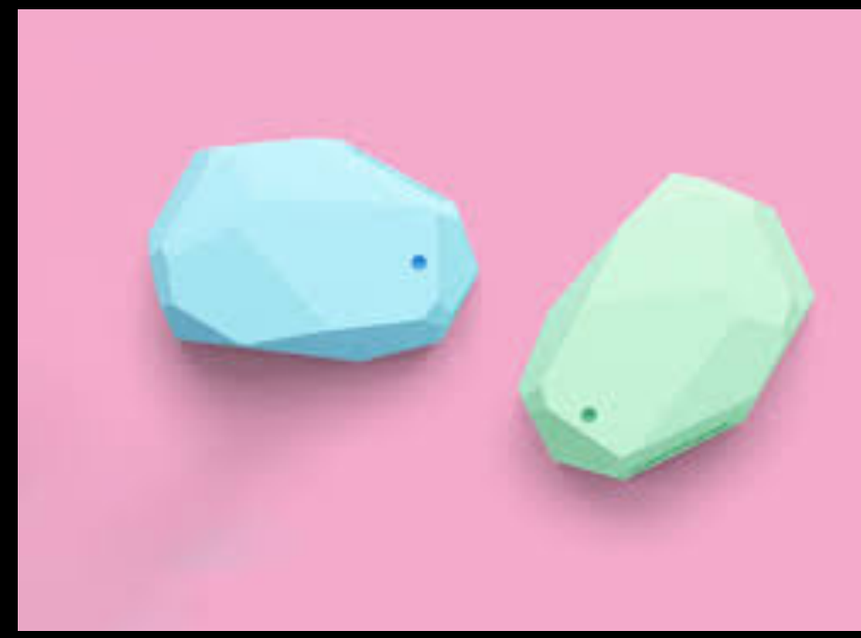
Agenda

- About beacons and the technology
- Project motive and goals
- Features in the application
- Technology Stack - shift from Android to Ionic
- Progress so far
- Further work plan
- Demonstration of the application

Beacon Technology

- Small computers powered by 2.4GHz radio bluetooth 4.0 signals
- Discreet physical objects allowing bluetooth enabled smart devices to interact with them
- Low energy bluetooth signals, highly energy efficient
- Unique UUID, several customisable settings
- Ranges of upto 40-50 metres
- No pairing, multiple connections possible
- Eddystone and iBeacon formats



Project motive

- Queues for book search in the stack room systems
- Each book has a different rack number
- Difficulty in finding the correct rack
- Solution: A mobile app that every user can use conveniently
- iOS and Android versions of the app to be made available

Application features

- Beacons to be setup around stack room, app to detect the signals
- Book search within the application (Like the OPAC search)
- Different books matching the search keywords to be displayed
- Selected book’s location to be shown on a custom map layout of the stack room
- User to be able to keep track of the books borrowed and deadlines
- Latest news and updates on new journals and books

Technology Stack

- Ionic framework for application development
- Google developers Beacons API to manage the beacons
- Cordova plugins for the Beacons SDK
- Python Flask and BeautifulSoup for the intermediate server
- Angular JS and jQuery for the custom map layout

Why Ionic?

- Free, Open Source and built on Angular
- The best “Native Like” framework for mobile app dev.
- Easily customizable components
- Easy scaffolding and efficient tools and services
- Cordova plugins for native functionality

Progress so far …

- Worked on integrating the Estimote beacons with the Ionic app
- Developed a server app (Rest API) to fetch data from the library server
- Integrated the mobile app with the intermediate server
- Created a map layout of the racks in the library stack room
- Integrated the map layout in the existing app and implemented the search functionality

Further work plan

- Implement the mapping of books to respective racks
- Develop the borrowed book records and latest news features
- Navigating the user to the book location
- Deploying the server application
- Setting up the beacons in the library stack room

Demonstration

Thank You