Szoftverfejlesztés Android platformra

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Minőségbiztosítás informatikája

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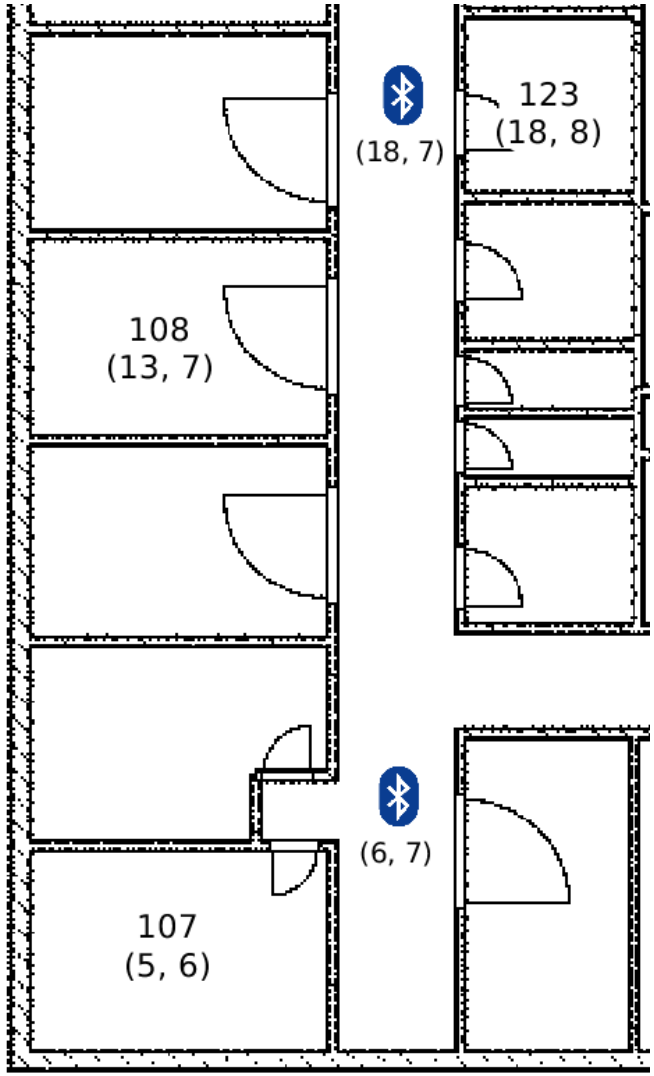
Android

- Google - Android
- Android Studio
- Fejleszési nyelvek
- Szoftver fejlesztés
- Szoftver tesztelés

Google - Android

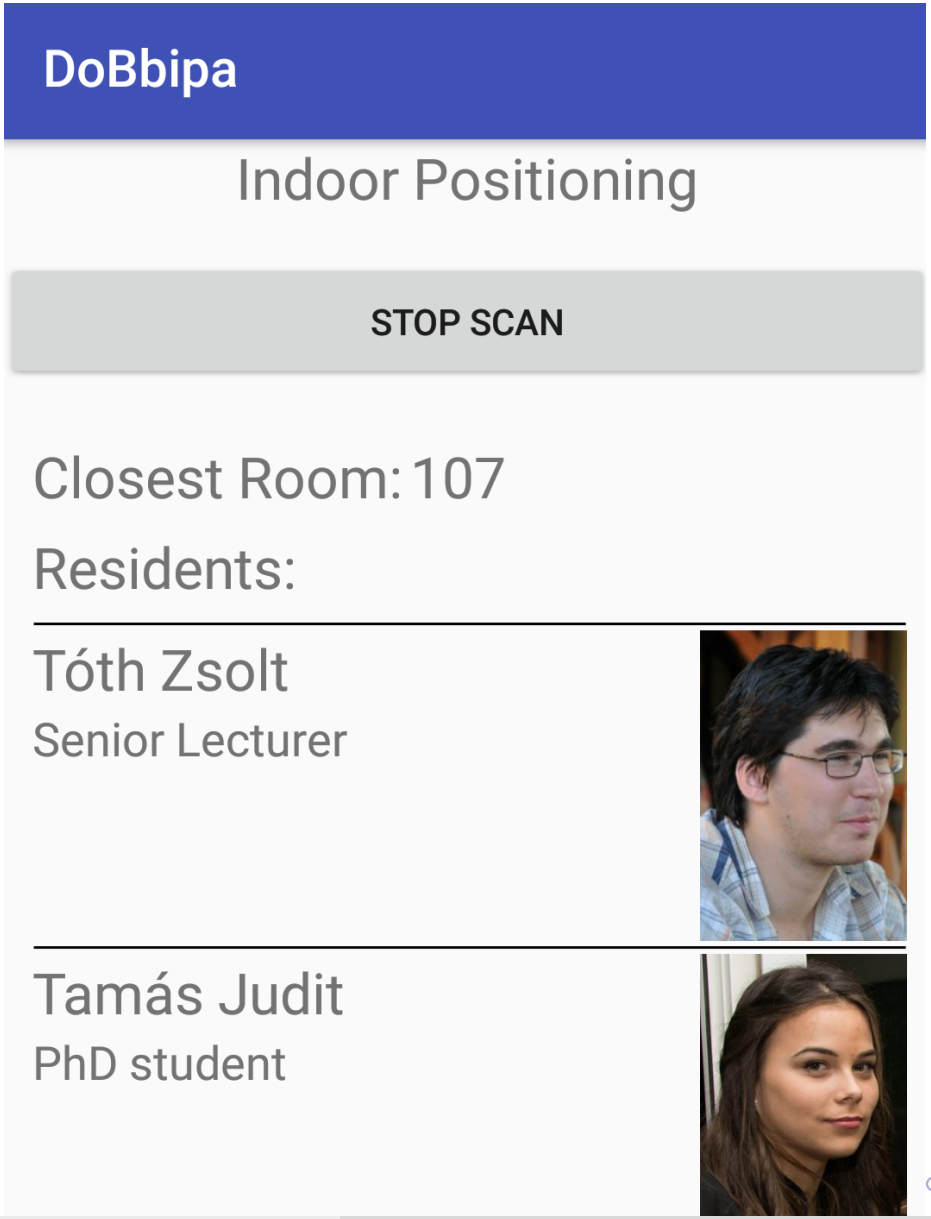
Test Environment

- Beacons
  - Placed 12m apart
  - In the ceiling for best coverage
- Rooms
  - Position
  - Residents



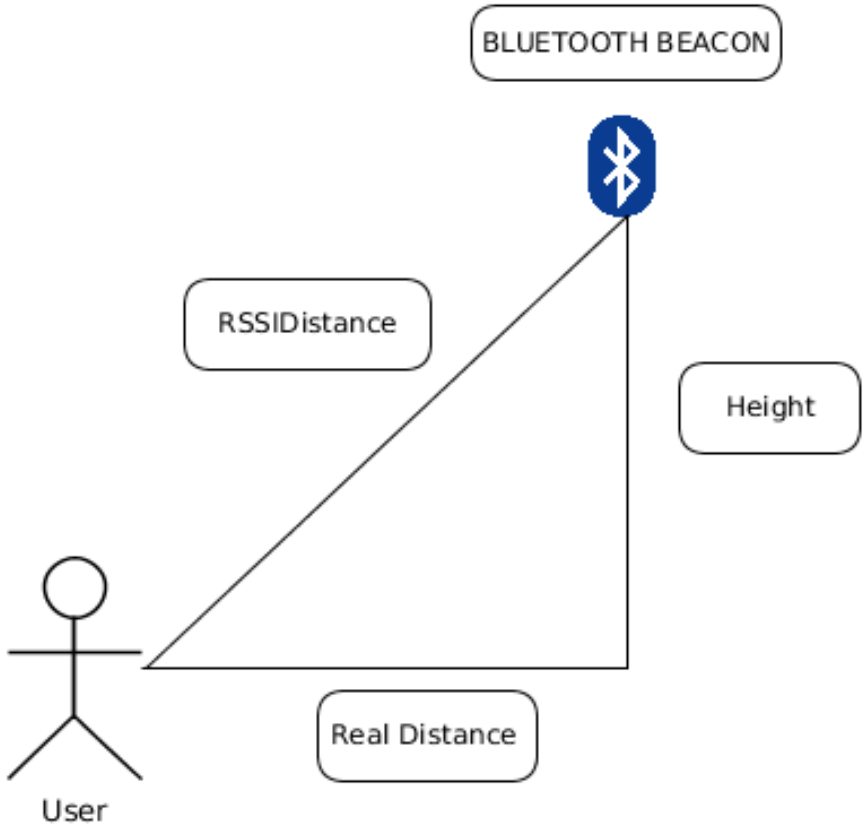
Application

- Developed for Android
- Implemented in Java
- Utilizes Bluetooth Low Energy technology



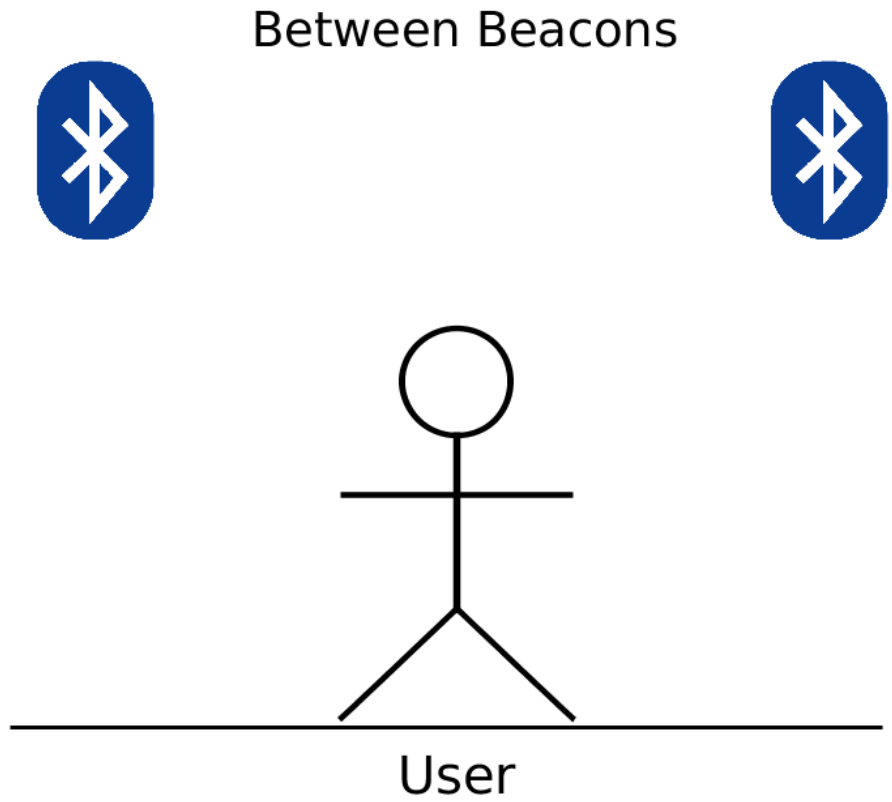
Algorithm

- Get RSSI
- Filter RSSI
- Calculate distance
  $d = exp(\frac{RSSI - A_0}{-10n})$
- Calculate distance between positions
- Determine User Position
- Find Closest room



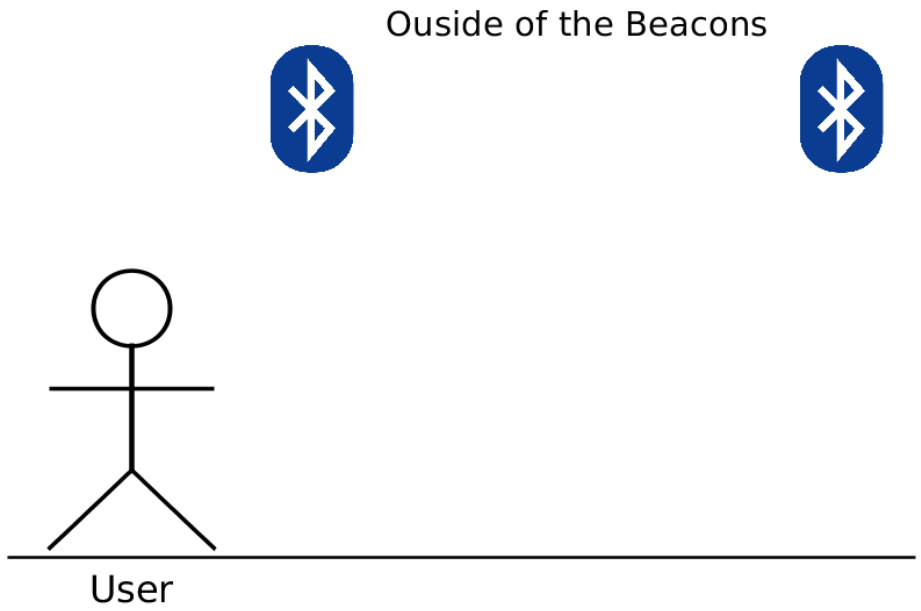
Case 1

- User Between Beacons
- Relies on both
- Proportional Division
- Device independent solution



Case 2

- User isn't between beacons
- Relies on the closest Beacon
- Places the user on the beaconless side
- Different results in different devices



Test Results

Reference point	Position	Correct	Not correct
(4,7) outside beacons	107	7	0
(6,7) under beacon 1	107	7	0
(10,7) front of fire hose	108	6	1
(14,7) front of room 108	108	7	0
(16,7) between room 108 and 123	108	3	4
(18,7) under beacon 2	123	7	0

Discussion

- Overall 88% accuracy
- Human body
- WiFi interference
- Increased Beacon density

- Future plans
  - Navigation
  - Orientation consideration
  - Dead Reckoning technique
  - ILONA integration

Thank you for your attention!