Location based platform for public transport monitoring system

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Motivation

Problem

- In modern megapolises transport problem is extremly important – it is very difficult to find fastest way from one place to another
- Due to traffic jams presonal trasport doesn`t guarantee that you will arrive on time
- Usage of public transport is difficult, because usualy it doesn`t comply with shedule

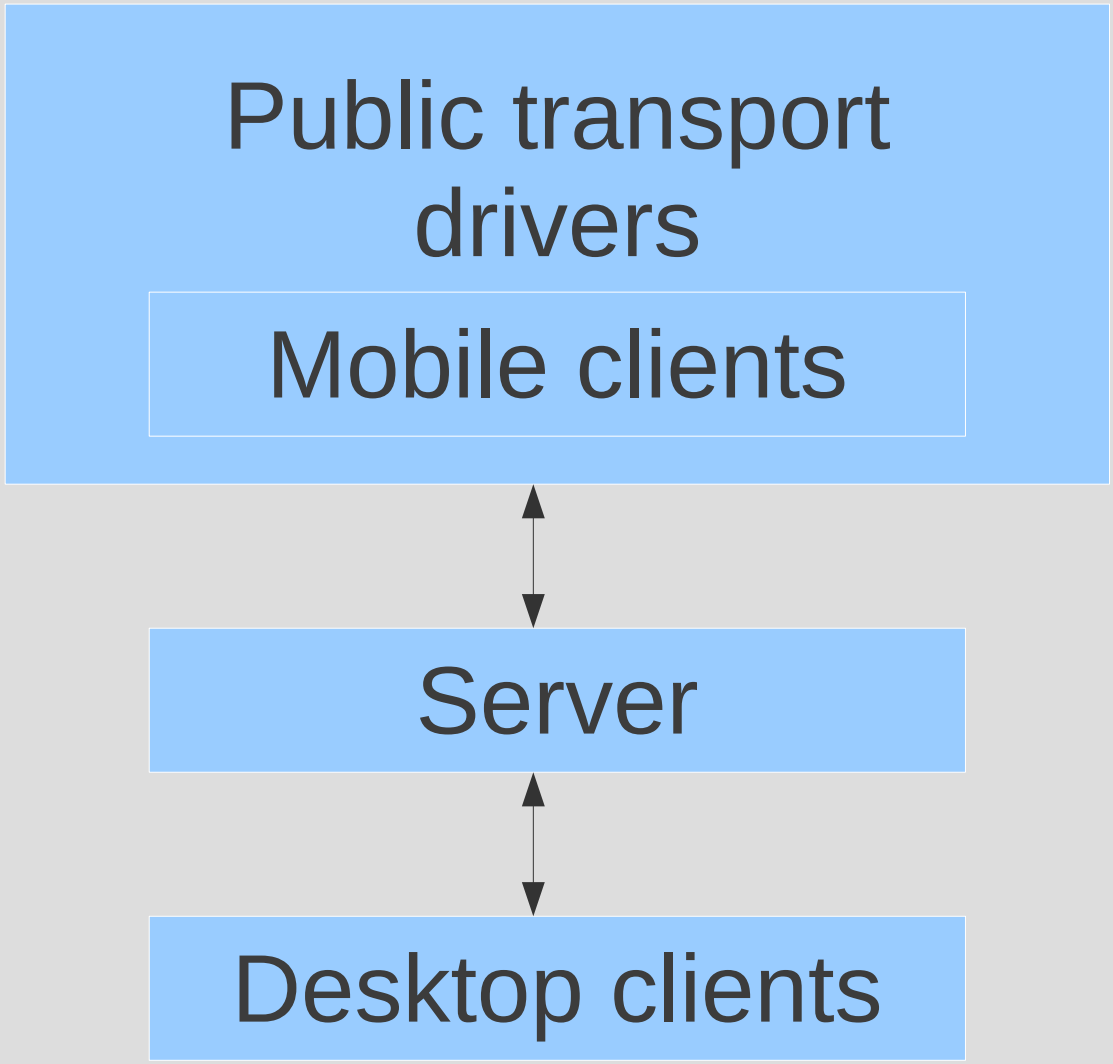
Solution

- Provide platform for collecting and displaing information about current public transport routes position

Goals

- Create platform for location-based services with following features
  - Provide easy and single interface for adding information about user position
  - Allow representation of a current user position on a map
- Create clients for most common mobile platforms

Architecture



Architecture

- **Server part**
  - process data from different devices
  - give access for geo-data by single protocol
- **Mobile clients**
  - send data about current device position to server
- **Desktop clients**
  - provide access to view position of the different users on a map

Exchange protocol

- Simple
- Open
- JSON based
- Example of request

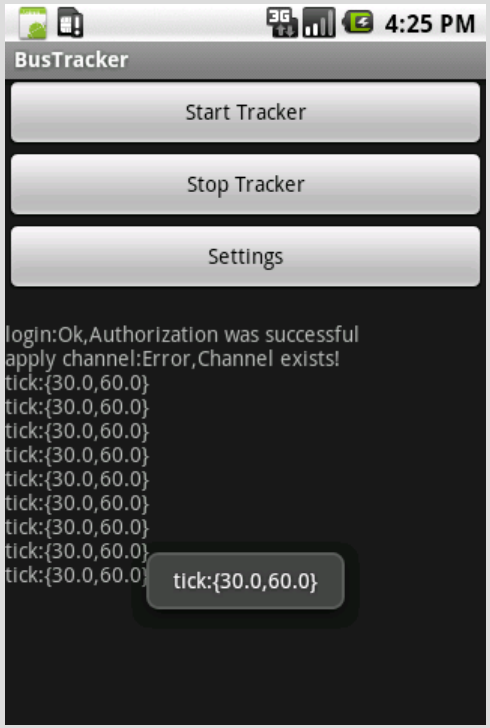

```
{
    "auth_token" : "22babc4",
    "channel" : "default",
    "description" : "example",
    "latitude" : 60.0,
    "link" : "unknown",
    "longitude" : 30.0,
    "time" : "23 04 2011 20:16:38.381",
    "title" : "mark example"
}
```

Server part

- **Data exchange protocol**
  - JSON based open protocol throw http(more human readable than XML and much more easier)
- **Data storage**
  - all data stored in PostgreSQL(allow fast extending on many hosts)
- **Server application and webserver**
  - platform server is a FCGI application(simple and allow to use C++ in web-services)
  - platform use lighttpd web-server

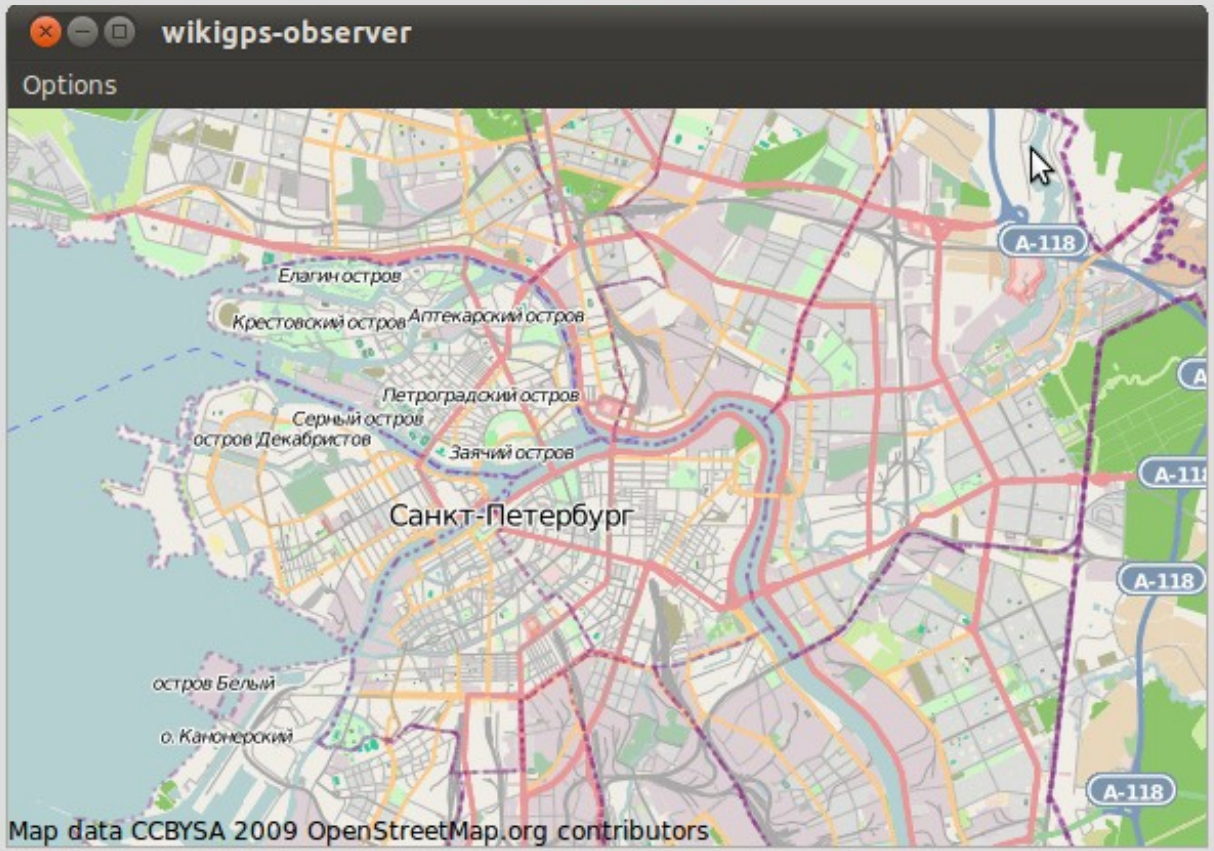
Mobile clients

- Android client(written using android-sdk, java based)
- Maemo client(Qt-based)



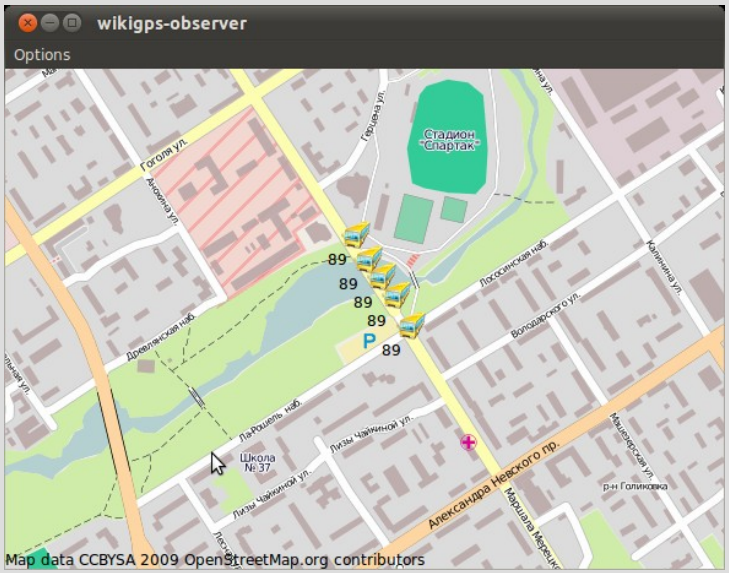
Desktop client

- Show current position of users on a map
- Allow to filter position data by it age
- Qt based application for MeeGo



Demo

- How trasport moving is modeled
  - Predefined track for each route
  - Curl-based script for mark adding to server
  - Three parallel instanses of script runned for each route
- Desktop client work
  - Marks loaded from server
  - The lastest marks for each route placed on a map whis number and icon of the route



Future plans

- Implement client for J2ME
- Add web interface support
- Add Maemo client into OVI
- Port Maemo client on MeeGo devices

Questions & Answers

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