

Planning

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COMEM Web Services 2016

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Haute Ecole d'Ingénierie et de Gestion
du Canton de Vaud



Objectives

Objectives for the course

- Understand the **generic** concept of “**Web Service**”.
- Understand that “**RESTful APIs**” are **one way** to expose web services.
- Be able to explain the **core principles** of the REST architectural style
 - Resource identification & URLs
 - HTTP verbs
 - Content-negotiation & resource representation
- Learn how to **implement** a RESTful API in JavaScript



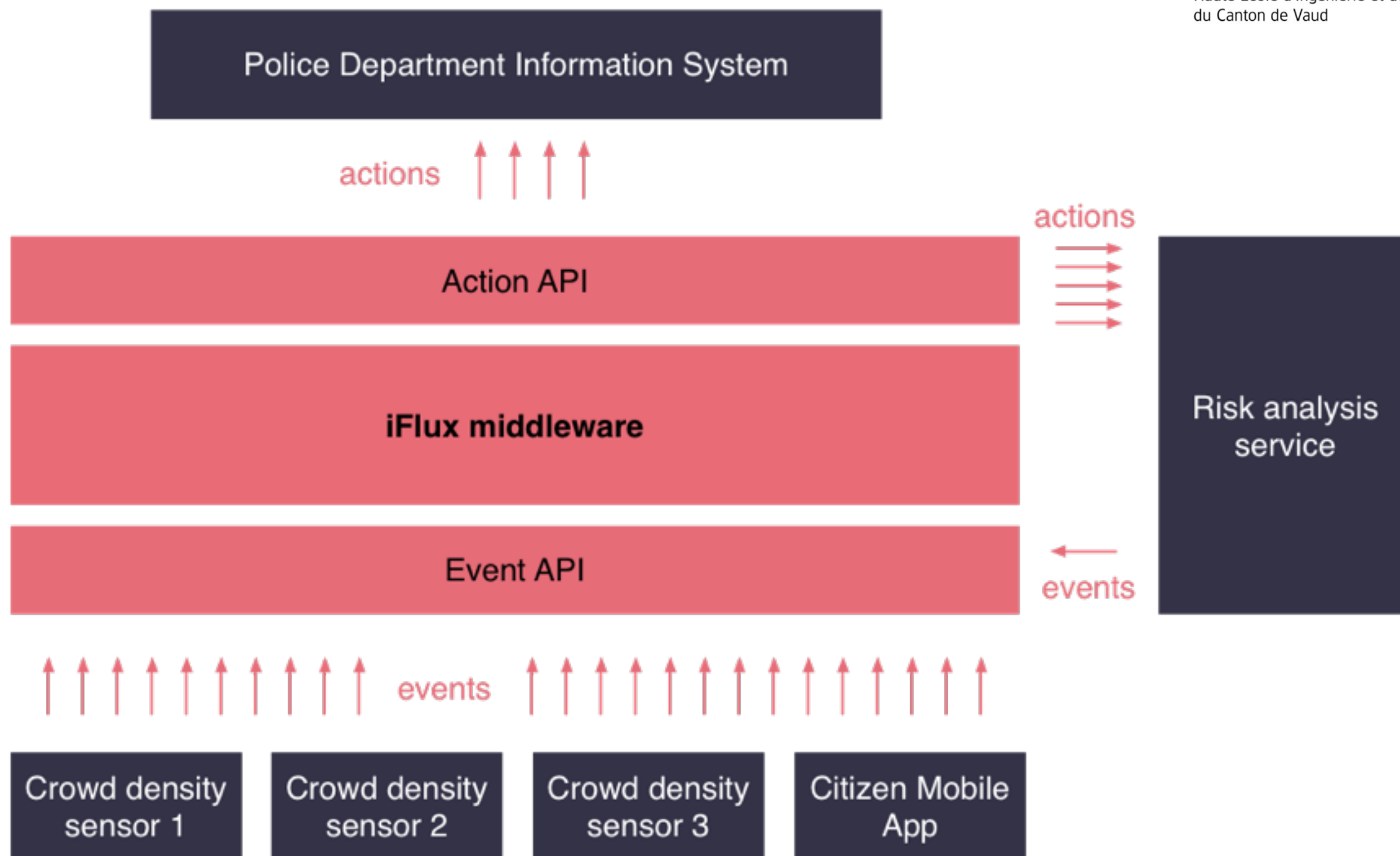
Theme

IOT MIDDLEWARE FOR REACTIVE CITIES

IF my city breathes THEN I can feel its pulse

CONTEXT

iFLUX is an ongoing project, conducted in the broader context of the iNUIT research programme at the University of Applied Sciences Western Switzerland. Whereas iNUIT intends to create a complete **IoT stack for smart city applications**, iFLUX focuses more particularly on the **middleware layer**. Our goal is to build an event-driven, rule-based environment that will make it easier to integrate the various iNUIT components and to automate urban workflows.



Citizen Engagement

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How to report a problem

- 1 Enter a nearby UK postcode, or street name and area
- 2 Locate the problem on a map of the area
- 3 Enter details of the problem
- 4 We send it to the council on your behalf

3,831 **5,276** **575,445**

reports in past
week

fixed in past
month

updates on reports

Recently reported problems

Large tree branch fallen

11:06 today



Misaligned bus lane road signs

10:46 today



Rubbish strewn over alley

10:42 today



Broken wooden fence post

10:33 today

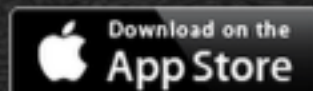



Fly tipping

10:22 today



The FixMyStreet App



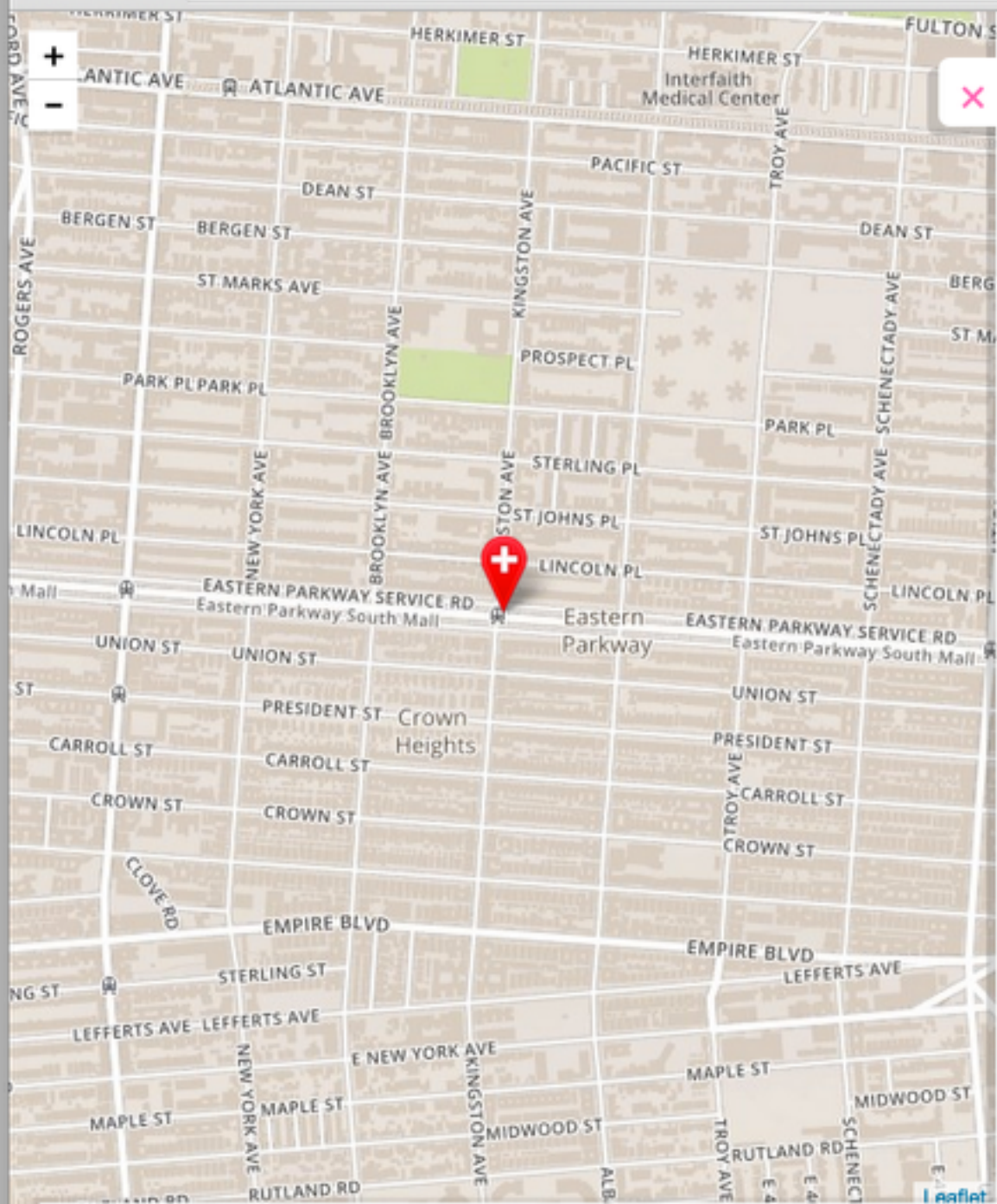
Powered by  FixMyStreet Platform

Are you a developer?

Would you like to contribute to FixMyStreet? Our code is open source and [available at fixmystreet.org](https://fixmystreet.org).

Are you from a council?

Would you like better integration with FixMyStreet? [Find out about FixMyStreet for councils](#).



Share a street safety issue.



 Double Parking



2 Crosswalk Timing



Long Distance to Cross



Red Light Running



Jaywalking

 **Poor Visibility**

 Speeding



Failure to Yield



Cyclist Behavior

Provide more information about the issue.

Description...

Your Name _____

Your Email

optional

Please provide some optional/private information about yourself.

Okay

Decline

Stamford Street Safety

Check your observations

Stamford residents deserve and expect safe streets. But too many people are seriously

Specifications

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<http://www.iflux.io/blog.html>



Planning & Guidelines

Tuesday	Wednesday	Thursday	Friday
Introduction to REST APIs	REST API principles, domain model, documentation	Deployment	Coding
<div>JS</div> Installation of tools	<div>JS</div> Coding	<div>JS</div> Coding	Demo

Today

Introduction

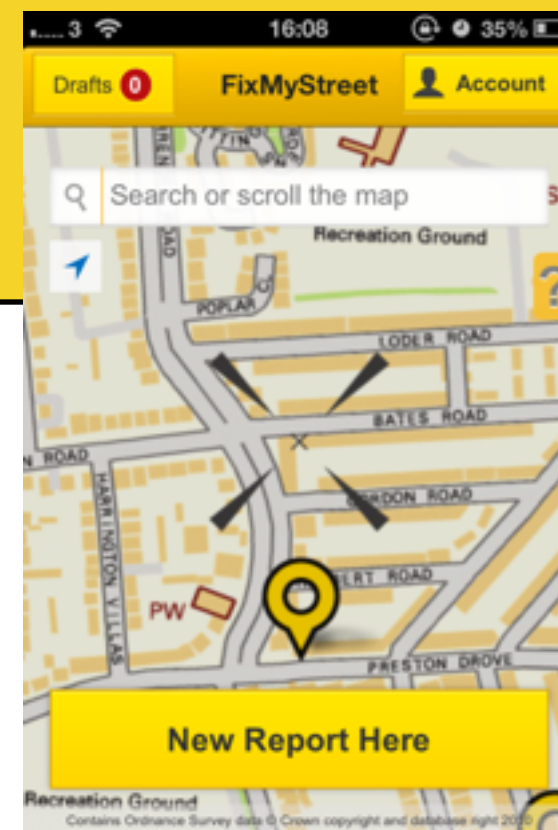
Big Web Services vs REST
Core REST concepts and principles

JavaScript, Node.js & npm

Implementing a REST API
(Express.js, MongoDB, Mongoose)

Web Services Course

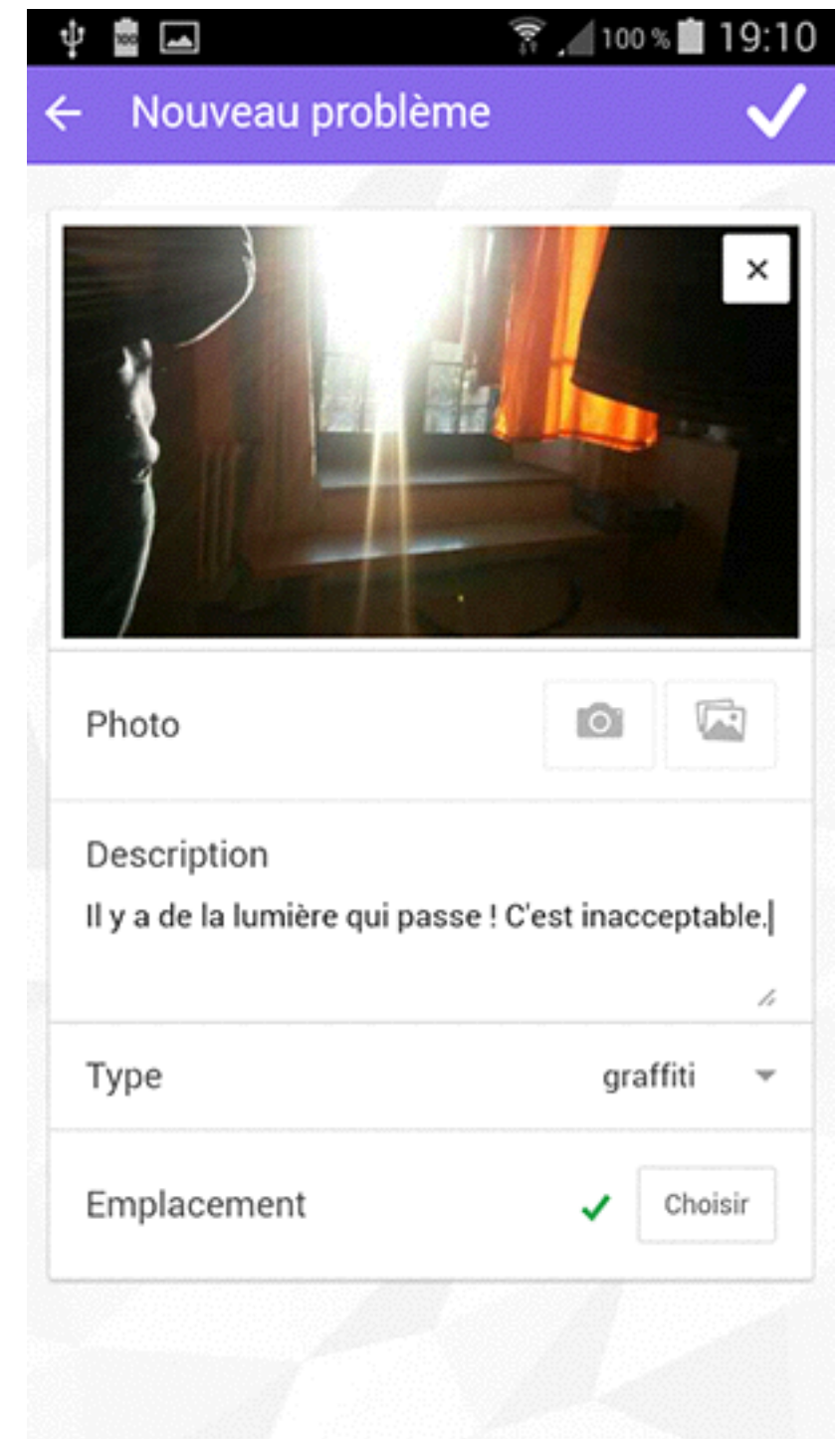
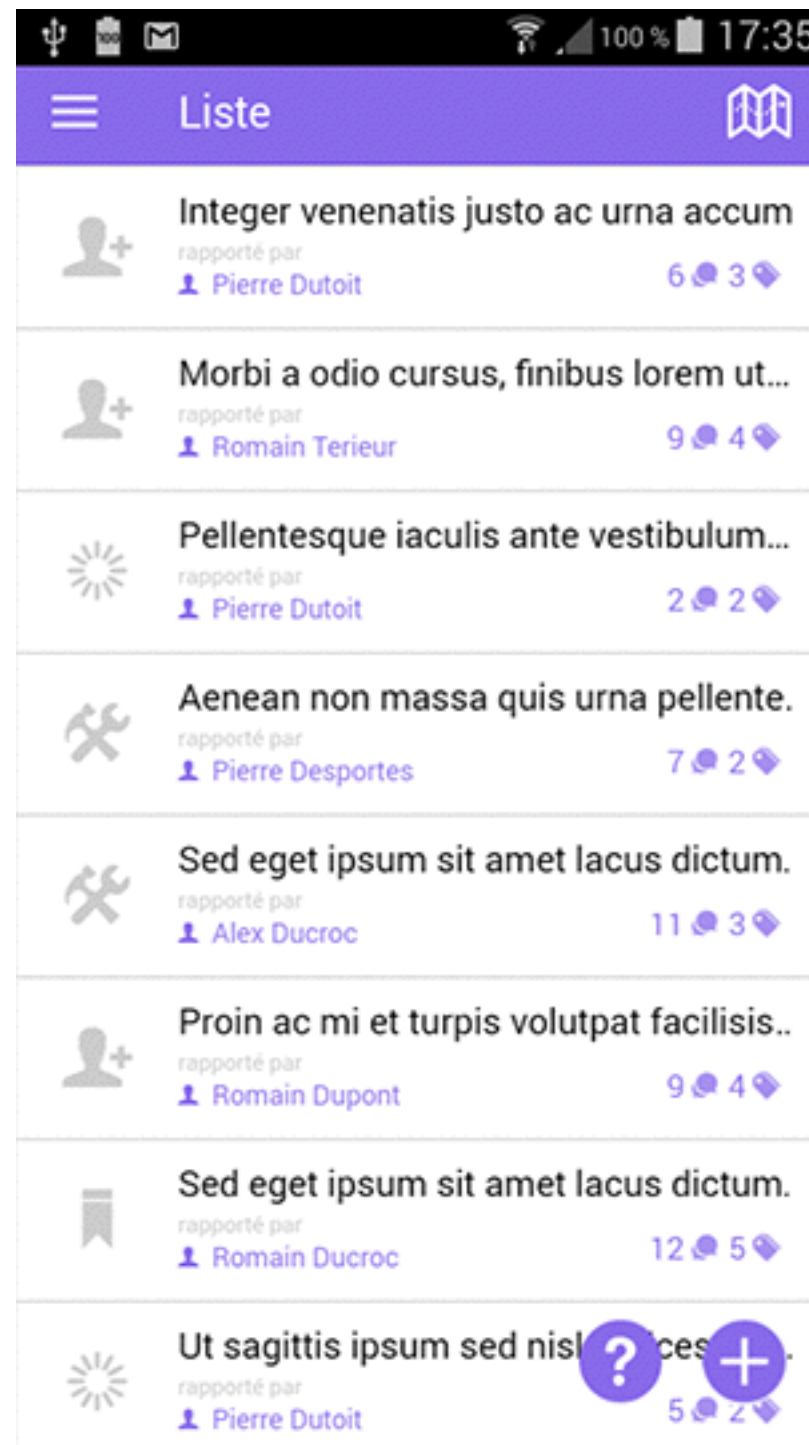
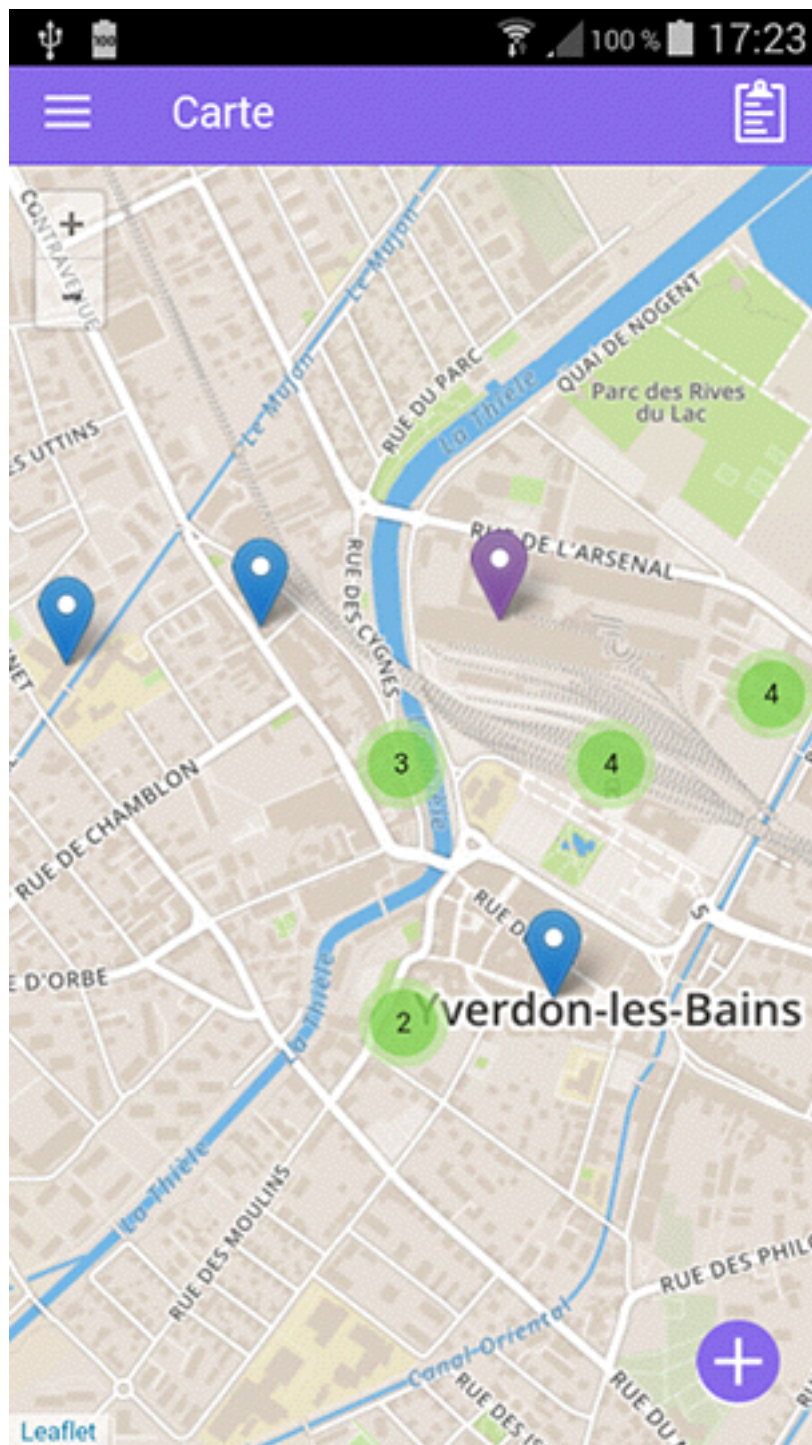
Mobile App Course



APPMOB: CityZen

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Guidelines & delivery

- You will work in groups of up to 4 people
- You will implement a REST API that follows the functional specification described in the iFlux blog post
- You will document this REST API
- You will deploy this REST API and its documentation on the Heroku platform
- You will be graded on the following criteria:
 - Adherence to REST principles
 - Quality of the implementation and respect of the conventions of the tools used (e.g. Node.js, Express.js)
 - Quality of the REST API documentation