



DSD Project: Taxi Service



2012-10-23



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MÄLARDALENS HÖGSKOLA



Project Vision



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- Our project aims at improving the management and the efficiency of the current taxi service in a metropolitan city like Milan.



The actual situation

- Cabs park at their stand and wait
 - for customers to show up
 - for a call from the operator





The problem

- They waste a lot of time waiting for customers
- Milan's taxi fleet is not used efficiently





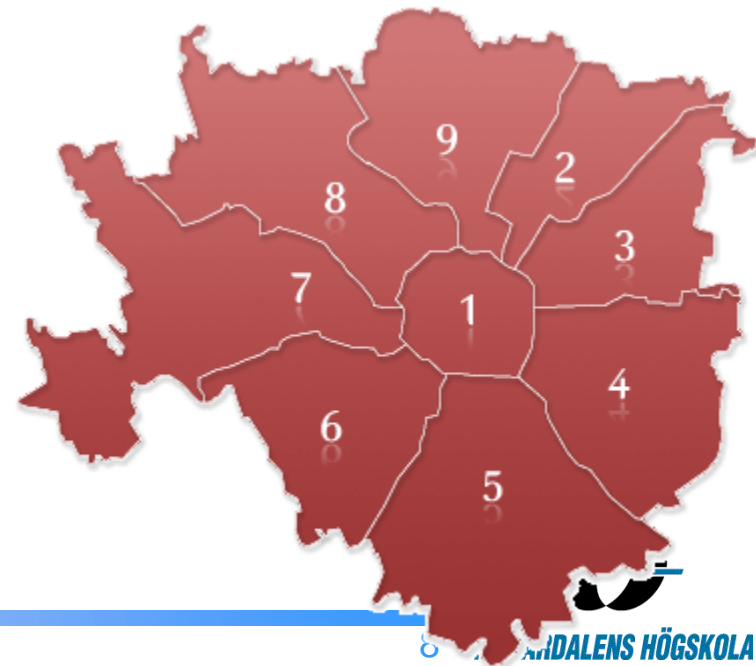
The solution

- A queuing system which allocates free taxis in dynamic queues according to their location and distributes calls according to the taxis' positions in the queue



The solution

- Each queue covers one administrative area of Milan
- Taxis entering an area are positioned at the back of the queue
- Accepting a call or leaving the area removes them from the queue





- For taxis: they can service more customers, both from the operator and from the streets => more money
- For operators: they can address more phone calls
- For citizens: waiting time will be shorter



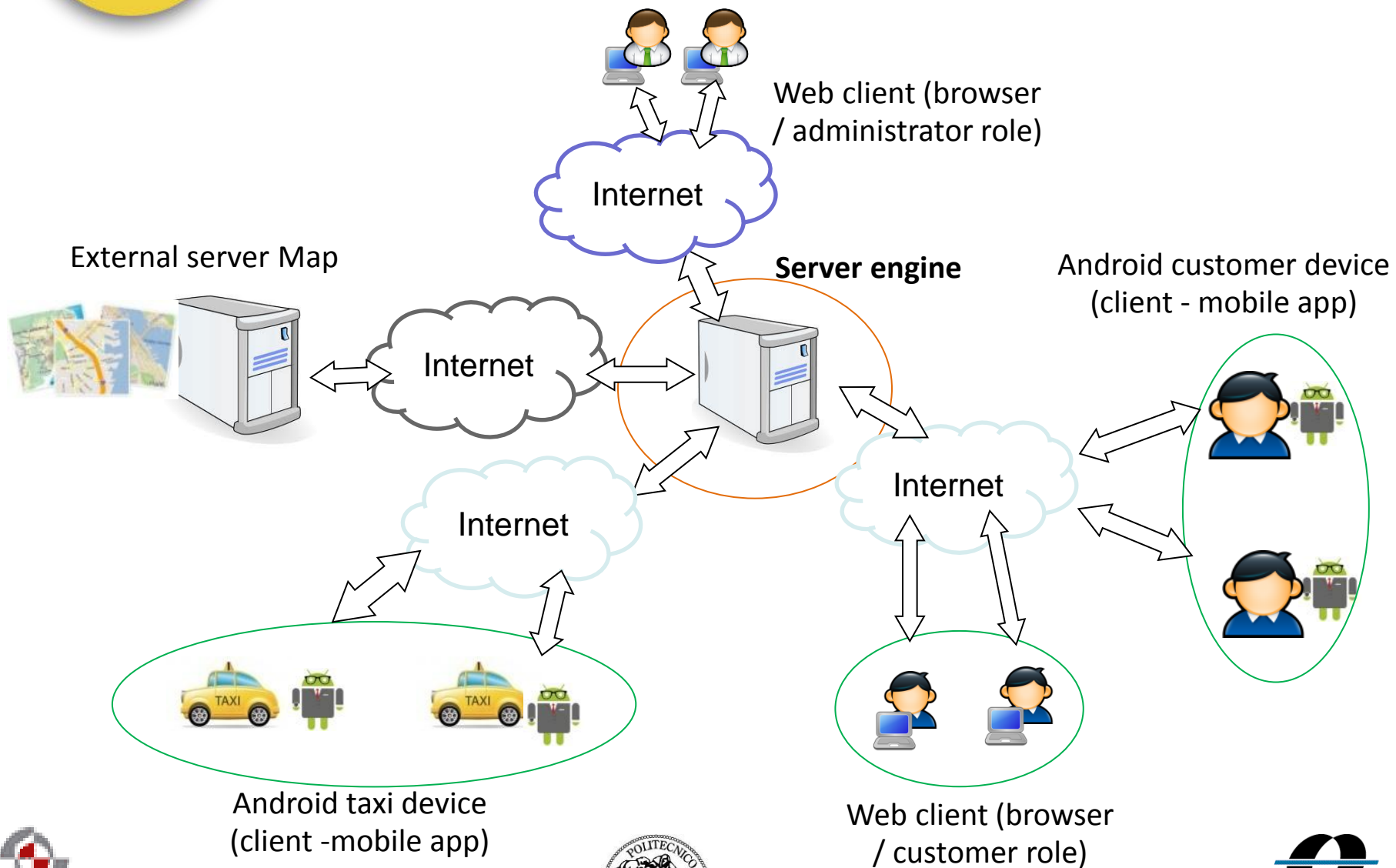
- Localize taxi in an area
 - Every taxi is associated to a queue
 - Every queue is located to a zone
- Allow the nearest taxi to give the service
 - The taxi that has the higher priority and is the in same area of the requestor is selected from the service
- Give information about the request status
 - Where the taxi is and when it will arrive



- Give some extra services to the customer
 - Information about location where he is directed
 - Taxi sharing
 - Information about traffic



Architecture Overview





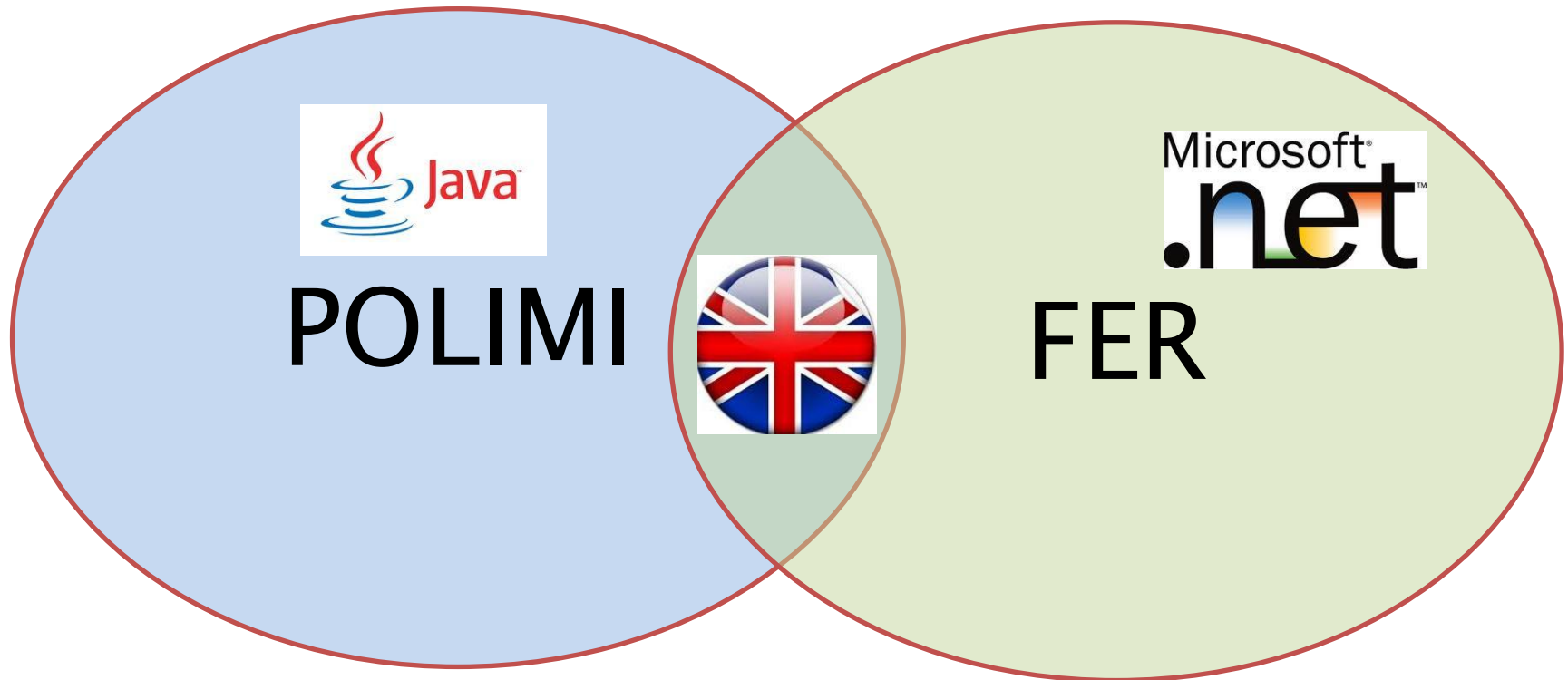
- Central server
 - Queue management
 - Implementation: TBD (java vs. .net, mysql vs. postgre, Google Maps vs. OpenStreetMaps etc)
 - Web application for administrators and customers



- Taxi driver's device
 - Get taxi's position, interact with central server
 - Implementation: Android
- Users' client for Android devices
 - To request a taxi
 - Implementation: Android
- Communication layer: TBD (websockets vs. middleware)



- Implementation of a taxi sharing service
- A city-wide dynamic route planning for taxis, to avoid congested areas
- Share realtime traffic data with Google Traffic
- In-car advertising / entertainment



- ...English is the only “common language” ...