

95-733 Internet of Things Smart Cities

Smart Cities

- Smart cities is about more than technology.
- Must often include partnering with (perhaps several) government agencies.
- In general, the goal of smart cities is to improve the quality of life of its citizens.
- In many cities, populations are increasing, weather events are more severe, and infrastructure is aging.

Smart City applications: transportation

- Goal: Reduce traffic congestion and improve air quality
- Consider EZPass adopted by several states
- Sensors may be placed in roads
- Cameras installed in traffic lights may be used as sensors
- Dashboard cameras mounted in garbage trucks monitor road conditions (initiating early repair)
- Monitor the traffic with intelligent traffic lights (counting cars passing and regulate light signaling)
- May involve lights working independently or in collaboration with each other
- Metro 21 at CMU reduced congestion by 26% and improved air quality by %34.

Smart city applications: human services

- Calls for help (disabled people, people who are sick)
- The data for each call is logged in a database
- Decision support systems may utilize these data for improved decision making
- For example, based on the call, prescription information might be made available to first responders

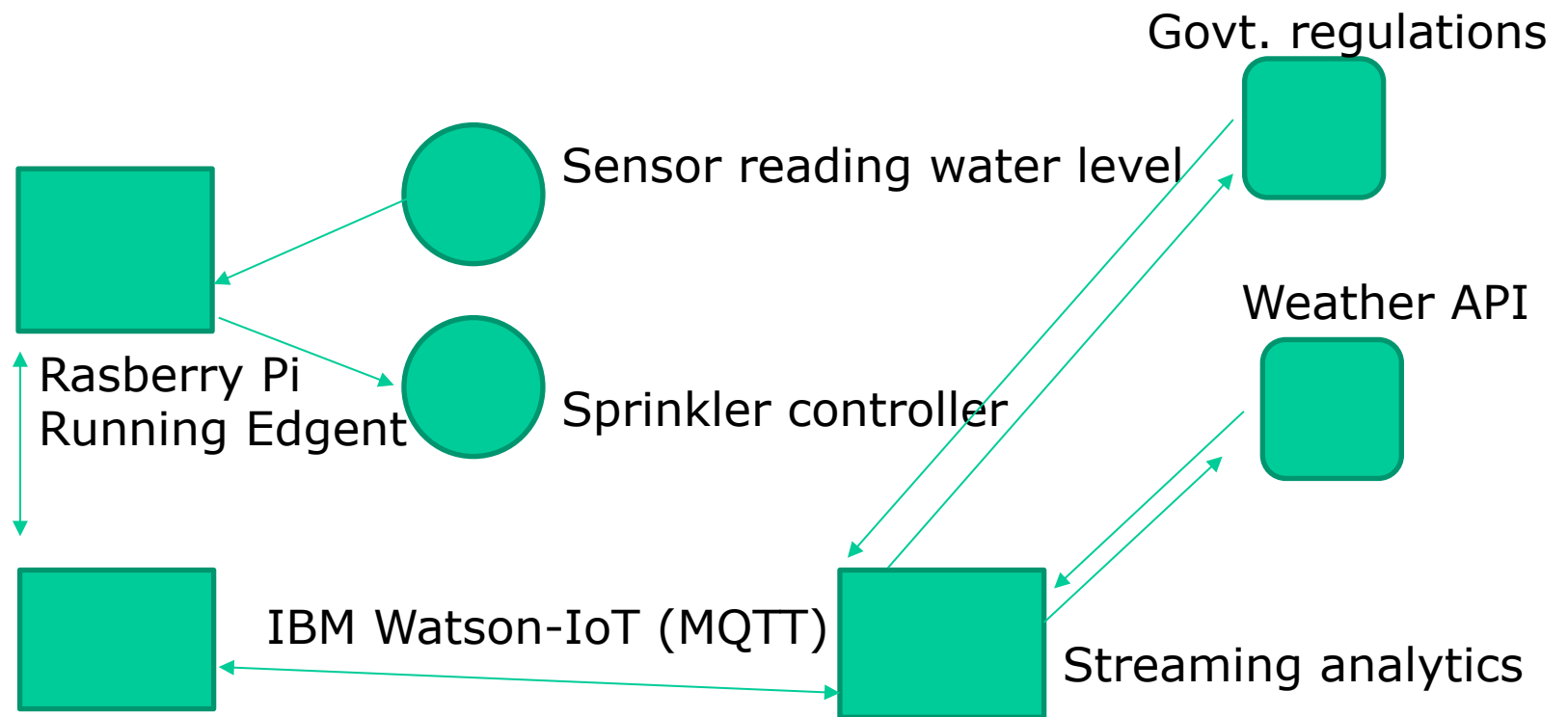
Smart city applications: Safety

- Data from shot sensing technology
- Data from 9-11 calls
- Police force deployment strategies in traditional hotspots
- Police force deployment strategies in temporary hotspots
- Locations can be targeted rather than individuals

Smart city applications: Conservation

- An example from IBM
- A city wide application
- Water conservation needs the smart sprinkler to be **connected** as well as **smart**.

Smart city applications: Water Conservation



<https://www.youtube.com/watch?v=Rvc1CqNjKOa&feature=youtu.be&list=PLhZR82i0P9NqrksME13f2t8tDMIhxUtCH>