

Smart Trolley Mountable Device



William De Vena
Shengze Cheng
Siyi Fu
Tianle Gao
Zhijian Chen
(Group 7)

Context

- Average customer goes **3 times a week** to the supermarket
- Spends **37 min** inside and **53.8 £**
- **69%** still goes physically to the store (U.S.)



The average customer buys **186.732 items** in his lifetime and spends the equivalent of **eight-and-a-half months** of their lives in supermarkets

Business problem

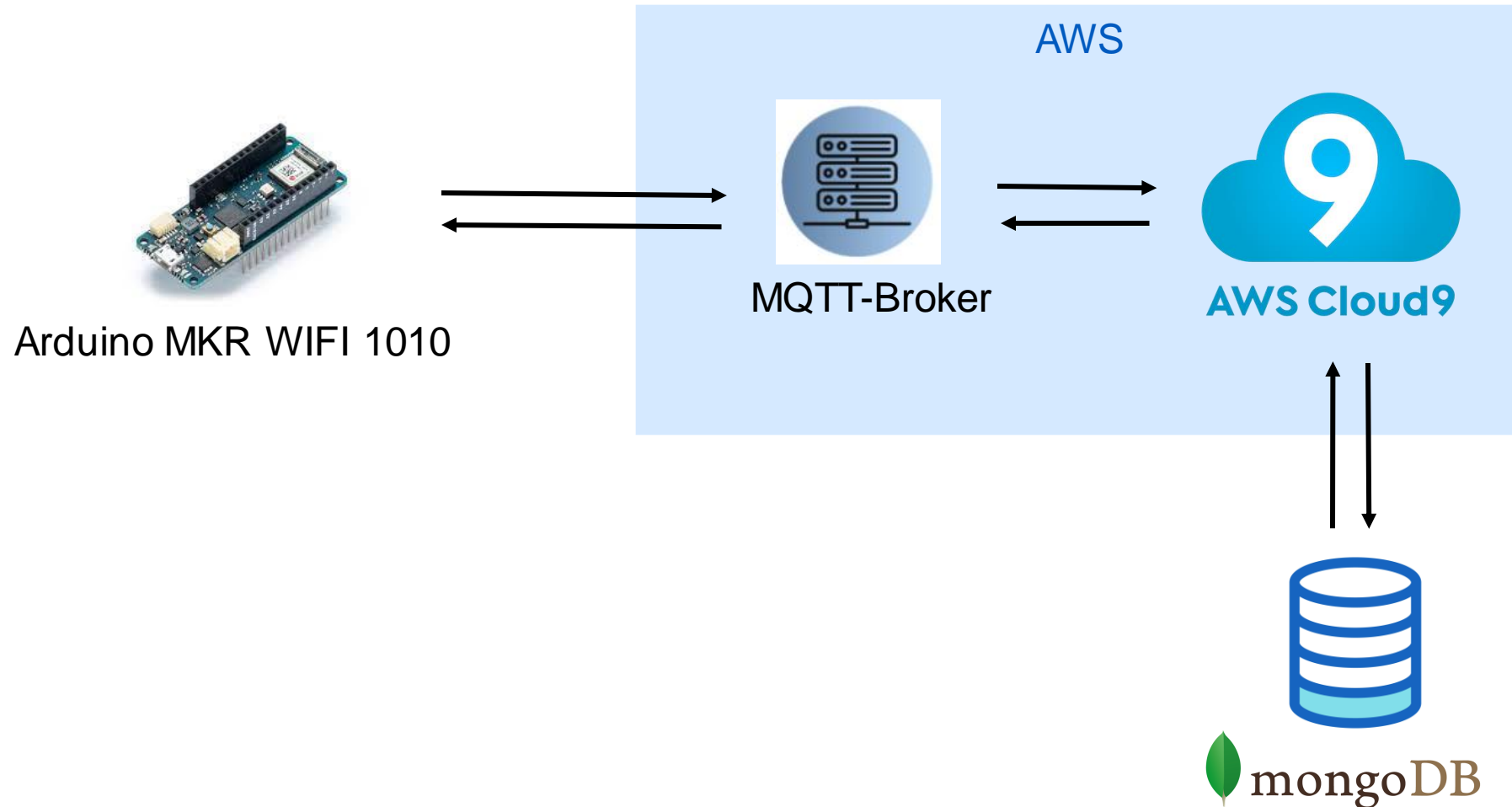
- Remove queuing



System functionalities

- Automatically scan products when the customer puts them in the trolley
- Display product's info on the screen
- Delete selected product from shopping list
- Remote control

System overview



MQTT

- Packet agnostic (supports future developments)
- Reliability (Quality of Service)
- Scalability
- Power consumption (47 times less than HTTP)



AWS IoT

- Costs (pay for what you use)
- Security
- Scalability
- Monitoring and Management



MongoDB (NoSQL databases)

- Flexible data models
- Horizontal scaling
- Faster queries
- Remote control



Comparison with Existing Product



Amazon's Cart



Sainsbury's Scanner

Advantages & Disadvantages

Pros

- Cost (replaces checkouts)
- Mountable and flexible
- Compatibility with old carts
- Ease of use
- Less breakable

Cons

- Cost (higher cost than normal carts)
- Stealing detection difficulty
- Security and privacy issues
- Dependent on WiFi network