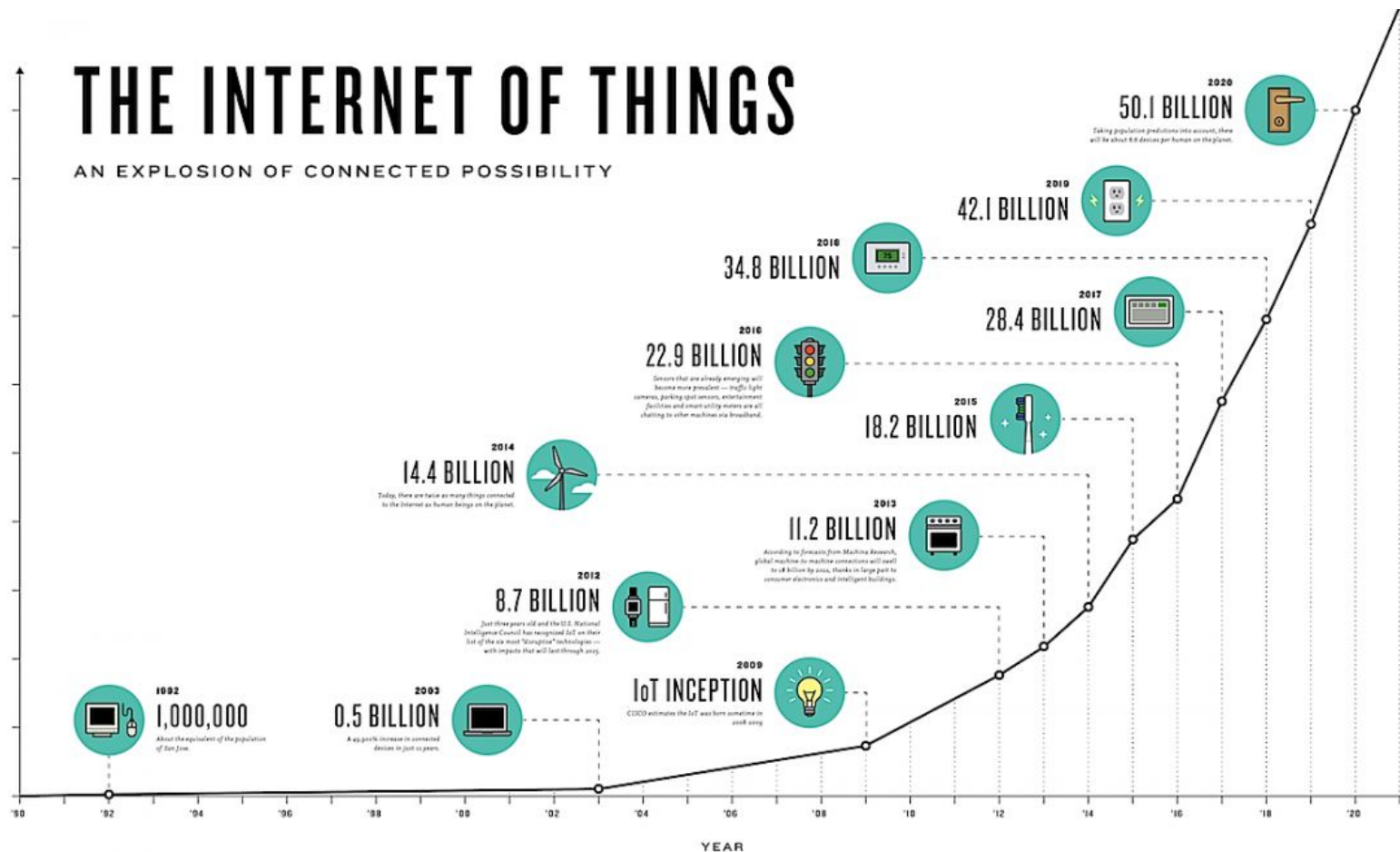


Building your first IoT Application with Arm

Tom Spink

THE INTERNET OF THINGS

AN EXPLOSION OF CONNECTED POSSIBILITY





About Me

Tom Spink

- Lecturer in **Computer Science** at the **University of St Andrews**
- Interested in **computer architecture, simulation, Internet-of-Things**
- Looking into **high-speed simulation of large-scale IoT systems**





What is the Internet of Things?

The Internet

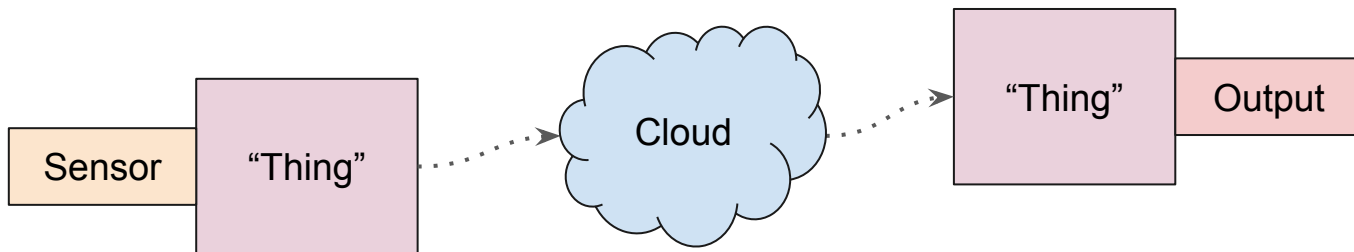
A global system of
“interconnected” networks

Things

Fitness trackers, light switches,
fridges, toasters, cars,
toothbrushes, kettles, doors,
cameras, security systems, ...

What is the Internet of Things?

- The Internet of Things (IoT) is a large collection of **Internet-connected physical objects** (things!)
- These **“things”** usually contain:
 - **Sensors** that generate data
 - **Actuators** that perform physical actions
 - Technologies for **communicating** with other devices or systems
- **“The Cloud”** plays a big role in IoT, hosting the programs that **consume** and **process** this data.



How can I get involved?

- **Hardware**
 - Embedded systems designer
 - Security specialist
- **Software**
 - App developer
 - Firmware engineer
 - Web developer
 - Security specialist
- **Communications**
 - Network engineer
 - Security specialist
- **Cloud**
 - Cloud Engineer
 - Systems Administrator
 - Security specialist
- Solutions engineer



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IoT Design and Development

Application

Cloud

Communication

Device



IoT Design and Development

1. What is the Internet of Things, and why is it important?
2. IoT Systems Architecture
3. IoT Device Architecture
4. Connectivity of Things
5. Connectivity on the Internet
6. The Cloud

What is the Internet-of-Things?



Security and Privacy



IoT System Architecture



IoT Device Architecture



Local Connectivity



Global Connectivity



The Cloud

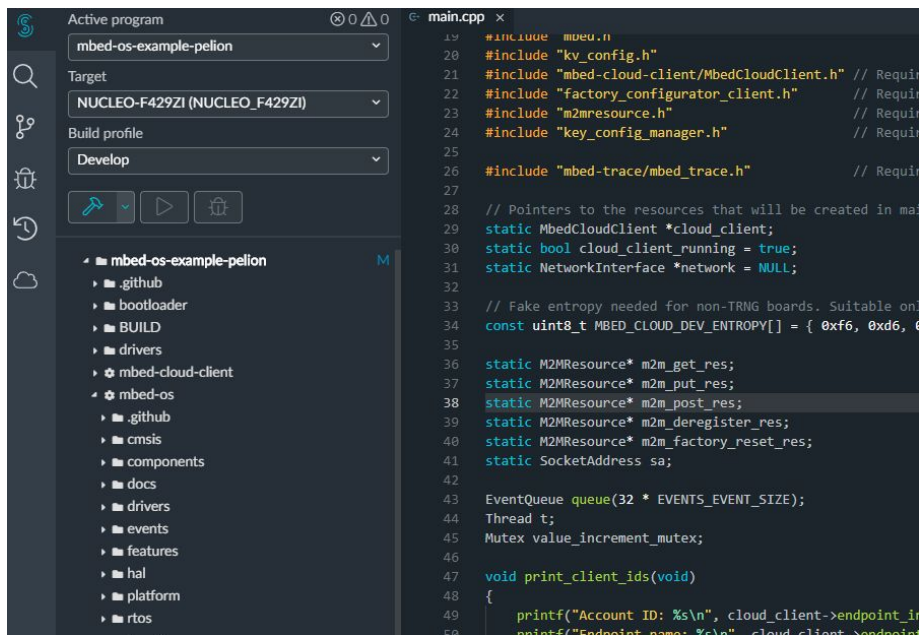




Practical Lab Exercises

1. Introduction to development ecosystem
2. Sensors
3. Local connectivity
4. Global connectivity
5. The Cloud

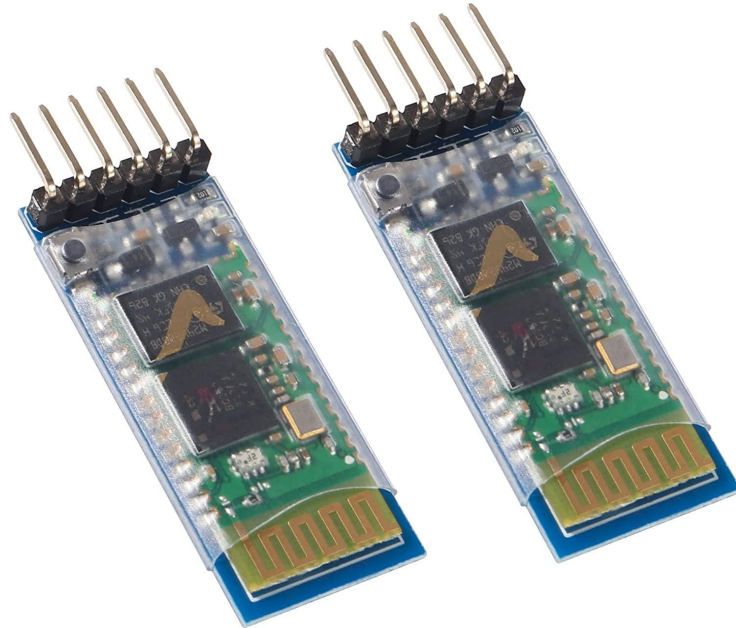
Introduction to Development Ecosystem







Local Connectivity





Global Connectivity



The Cloud



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Thank-you