

# Connected Systems: Project 1

## “Somebody broke that”

...

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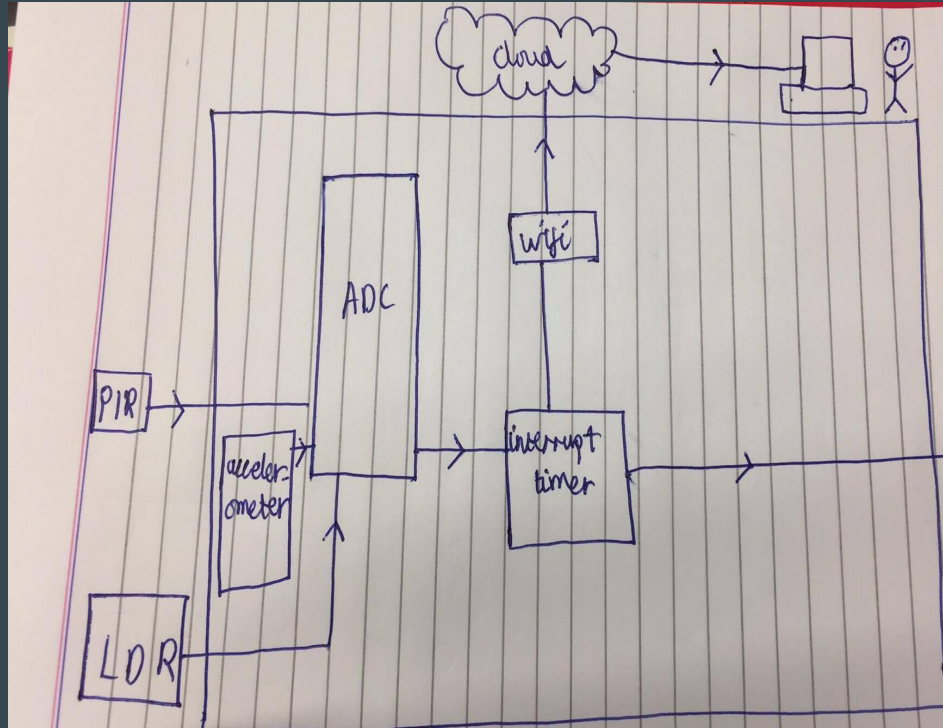
# Task 1: Design Requirements

- The task was to design a wireless system which would allow a user to track the condition of their shipment.
- It should be able to record in a cloud based service whether the package has been subject to any shocks or sudden movement or opened

## PROPOSED SOLUTION:

- To detect sudden movements: Accelerometer sensor built into microcontroller is used
- To detect opened package: LDR sensor is used

# Package Tracker Block Diagram



- Connect sensors to the microcontroller.
- Connect microcontroller to cloud.
- Send to cloud if package has moved (if accelerometer has triggered)
- Send to cloud if package has opened (if ldr has detected light).

# Demonstration

The screenshot displays the IBM Watson IoT Platform interface. The left sidebar contains navigation links for Devices, Recent Events, Sensor Information, Metadata, Device Information, Diagnostic Logs, Error Codes, Connection Log, and Actions. The main content area shows the details for a specific device (ID: 544a162edbcb, Type: cc3201). A modal window titled "status (json)" is open, displaying a JSON event received at 10:28:12 AM.

**Device Details:**

- Device ID: 544a162edbcb
- Device Type: cc3201
- Date Added: Wednesday, March 22, 2017
- Added By: martin.topouzov@gmail.com
- Connection State: Connected on Wednesday, March 22, 2017 at 10:22:29 AM from 82.132.245.151 with an insecure connection [Refresh](#)

**Recent Events Table:**

Event	Format	Time
status	json	Mar 2
status	json	Mar 2
status	json	Mar 2
status	json	Mar 2
status	json	Mar 2
status	json	Mar 2
status	json	Mar 2
status	json	Mar 2
status	json	Mar 2
status	json	Mar 2

**status (json) Modal:**

Event received: 10:28:12 AM

```
{"d":{"myName":"TILaunchPad","temperature":169.4095.}}
```

COM4

Send

```
Publishing: {"d":{"myName":"TILaunchPad","temperature":161      2464.}}
Publishing: {"d":{"myName":"TILaunchPad","temperature":156      2487.}}
Publishing: {"d":{"myName":"TILaunchPad","temperature":159      2479.}}
Publishing: {"d":{"myName":"TILaunchPad","temperature":151      2485.}}
Publishing: {"d":{"myName":"TILaunchPad","temperature":151      2491.}}
Publishing: {"d":{"myName":"TILaunchPad","temperature":146      2432.}}
Publishing: {"d":{"myName":"TILaunchPad","temperature":146      2465.}}
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Publishing: {"d":{"myName":"TILaunchPad","temperature":152      2486.}}
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Publishing: {"d":{"myName":"TILaunchPad","temperature":148      2446.}}
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Publishing: {"d":{"myName":"TILaunchPad","temperature":154      2471.}}
Publishing: {"d":{"myName":"TILaunchPad","temperature":149      2474.}}
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Publishing: {"d":{"myName":"TILaunchPad","temperature":155      2499.}}
Publishing: {"d":{"myName":"TILaunchPad","temperature":164      2417.}}
```

☒ Autoscrol

No line ending

115200 baud

ENG 10:24

# Critical analysis

Cloud : IBM Bluemix interface is easier to use and offers more potential than Amazon AWS or IBM quickstart

Microcontroller: TI CC3200 has built in wifi server capabilities and is therefore suitable for sending and getting data to online cloud using MQTT

Connectivity : Using GPRS or mobile communication module would allow portability and extra convenience.