Example Project Description

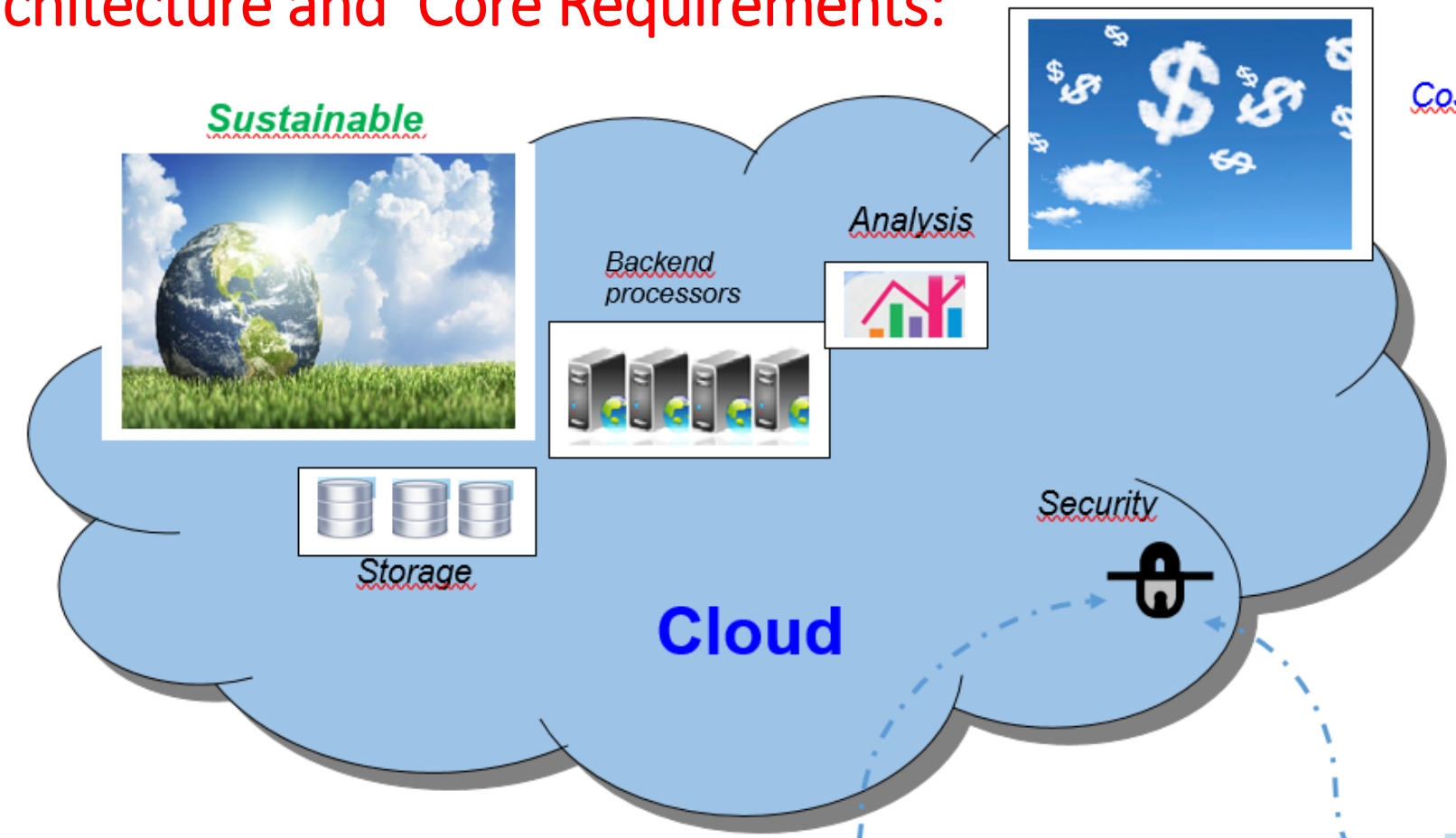
Application Requirements Example

1. Collecting and sending real-time data to Cloud storage including
    1. Sensor data
    2. Meta data (relevant information such as text, audio, video, etc)
2. Visualization of data on GUI
3. Multi-user support with
    1. Login/authentication
    2. Claims-based authentication (via FB, Google, Twitter, etc)
4. Change personal settings (sampling rate, shutdown or start a sensor, etc)
5. Battery level indicator
6. Audio-text conversion before upload

Android Sensors

- Proximity
- Light
- Motion (accelerometer)
- Gyration (magnetometer)
- Humidity
- Pressure
- Temperature
- GPS
- Others (external sensors such as heart beat or wearables

System Architecture and Core Requirements: Example



Clients:
Phones, tablets, PCs…

IoT data source:
Sensor data collected via Android phone

Product Attributes

1. Flexibility (modularity) to:
    1. Add sensors
    2. Migrate application/storage to another cloud provider
2. Usability

    Easy-to-use and intuitive web interface
3. Unit testing
4. Documentation
    1. Design
    2. Code

Development Process

1. Agile development
    1. Regular discussion among members
    2. Transcript of discussion to be documented
    3. Time reporting (individual and combined)
    4. ***Bi-weekly reports***

2. Documentation
    1. Design documentation (clear and understandable)
    2. Code documentation
    3. Testing documentation

3. Product testing
    1. Unit testing
    2. Integration testing

Meetings

- Progress Report
- It is possible that only one member per group is invited to meeting
- Transcript of group meetings (only the important points)
- Design document presentation
- Code presentation
  - Description of code (according to design)
  - Unit test demo
- Q&A

Make sure that you have all the necessary stuff runing on the computer you use for presentation (IDE, Cloud configuration , the code, etc.)

General Requirements

1. Sustainability issues:
    1. Cost effectiveness of solution
    2. Environemntal sustainability

2. Service model of the application
    1. Technical aspect of commercializing application
    2. Business model

3. Your own requirements (if any)

Useful Advice on Your Project

- You have to identify appropriate tools and technologies by yourselves
- What you get from the lectures and the labs is not sufficient
- The lectures only give conceptual foundations
- The labs give you only basic skills (kickstart)
  - College level courses vs Bootcamps/training workshops:
    - Platform/vendor neutrality instead of a specific tool/product
    - Focus on core issues and theory instead of implementations
    - Focus on general foundation instead of latest tools and fads
    - **Developer** instead of **coder**
    - …

Useful Advice (cont'd)

Develper vs Coder:

- Distributed applications (multi-tier)
- Communication
- Performance,
- Security,
- Interoperability
- Social and sustainability issues
- UI (Front end)
- …