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# **Project Introduction**

ECE 417

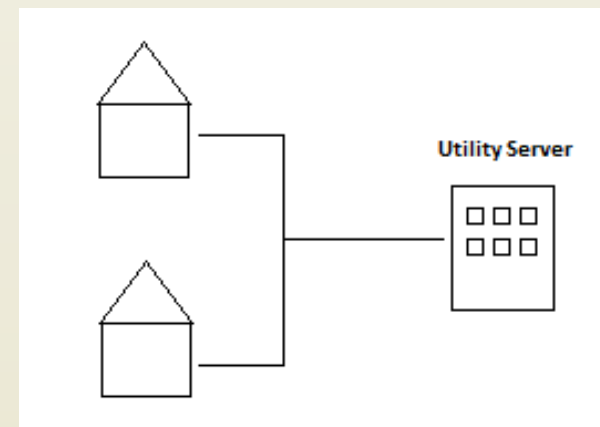
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# Project Definition

- Project: Designing and implementing a controller software for a smart meter.
- What is a smart meter?
  - ◆ Small computing machine
  - ◆ Has sensors to receive data
  - ◆ Runs a programs
  - ◆ 2-way communication with the server



<http://www.haldimandcountyhydro.ca>



# Smart Meter

- 250,000,000 smart meters by the end of 2015
- All BC will have smart meters by the end of 2012
- Benefits
  - ◆ Power outage information
  - ◆ Less need for in-person visits
  - ◆ Power theft
  - ◆ Online access to energy consumption
  - ◆ More efficient energy usage

# Functionality review

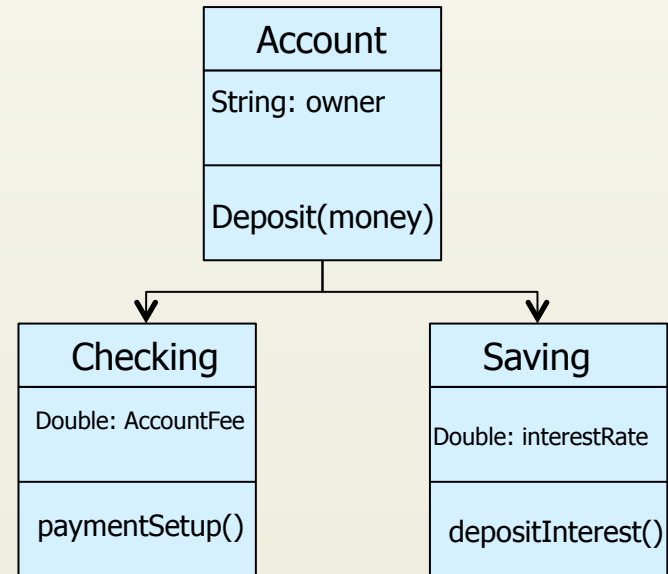
- Receive analog or digital data
- Process data if necessary
- Store data if necessary
- Send consumption data to the utility server
  
- You have to define the required functionalities for the controller software

# Project

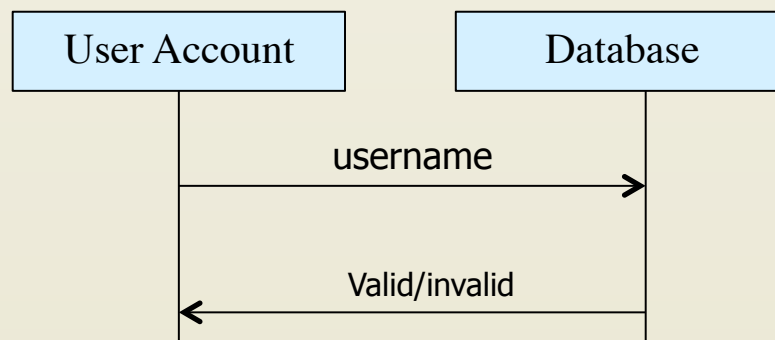
- Three main steps
  - ◆ Requirement Analysis
    - What are functional/non-functional requirements?
  - ◆ Design
  - ◆ Implementation

# Design

- Class Diagram



- Sequence Diagram



# Implementation

- You do not need to get involved with low-level meter-dependent coding
- You will be provided with APIs to do low level jobs
  - ◆ Read/write analog/digital data
  - ◆ Send data through network to the utility server
    - `int digitalRead(int)`
    - `digitalWrite(int)`
    - `Display(int)`

# Milestones

- February 2<sup>nd</sup> : The requirement analysis document
  - ◆ 1-2 page
- March 1<sup>st</sup> : The design document
- April 3<sup>rd</sup> : Implementation and final report



**Questions?**