Project Introduction

ECE 417
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 program
  - 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 2nd: The requirement analysis document
  - 1-2 page
- March 1st: The design document
- April 3rd: Implementation and final report
Questions?