Grading rubric for Assignment 1

Read the paper "Does Providing Dormitory Residents with Feedback on Energy and Water Usage Lead to Reduced Consumption" (Lucid_IJSHE_DormEnergyFeedback)

a) Submit a "master list" of all attributes that you think need to be represented and recorded in the eventual database to support the Web site functionality reported in the paper.

This component is worth 25 points.

Compare student attribute list against the "Oberlin Energy DB Attributes" given by Doug on next page.

If the submission lists all those **attributes listed in bold** on Doug's list, the give 21 points (roughly 85%). This may require some interpretation regarding whether the student's expression of an attribute is equivalent or close to the instructor's expression – use reasonable discretion.

If missing explicit requirement for **timestamps**, subtract 2 points from running total

For any **bolded attributes** NOT listed, subtract two points from running total

If any non-bolded attributes given on Doug's list are listed by student (again, discretion), then add 1 point to running total for each.

If any non-bolded, *italicized attributes or references* from Doug's list are given explicitly (or perhaps indirectly – use discretion), then add 1 point to the running total.

If other reasonable attributes listed in submission, then add 1 point to running total. Final total cannot exceed 25

points.

b) Submit a page-length discussion of the relevance of tenet 5 of the IEEE Code of Conduct to the project described in the paper.

This component is worth 25 points The IEEE Code of Conduct can be found at

https://my.vanderbilt.edu/cs265/ieee-code-of-conduct/. Tenet 5 reads 5. to improve the understanding of technology, its appropriate application, and potential consequences;

We'll look for at least one of two related themes, one with a focus on the dorm energy monitoring project itself (to the database that we are "reverse engineering") as the technology referenced in tenet 5, and one with electrical and water infrastructure being characterized by the project as the technology referenced in tenet 5.

Theme 1) The dorm energy monitoring project was created to illustrate to "the public" (students and staff) the implications of technology that requires energy and/or water (e.g., appliances, computers, lights, water heating and pressure, etc) on environment and economics (operational costs). In this case, it is the electrical and water infrastructure that is "technology" referenced in tenet 5 (and the project itself, is an important component in highlighting the implications of that technology).

Theme 2) The dorm energy monitoring project illustrates that human behavior can be changed through technology, and that is an important part of the consequences of technology, pro and con. In this case the dorm energy monitoring project is the technology that is referenced in tenet 5, and its consequences are behavioral change.

Give 20 points (80%) to a well-intentioned, well-written answer that does NOT reference, directly or indirectly, one of the themes above.

Give 23 points (92%) to a well-written answer that addresses rather clearly one, but not both, of these themes. (sloppy writing can lower)

Give 24 points (96%) to a well-written answer that addresses rather clearly both of these themes. (sloppy writing can lower)

Add 1-3 points (cannot exceed 25 points total) for content that blows our minds, and to a lesser extent, beautiful style, good argument, and other on-point commentary (e.g., assessment of experimental/analysis design and validity).

Final total cannot exceed 25 points.

Oberlin Energy DB Attributes

1. Dorm/building readings (with timestamps)

- **Water readings (from sensors) with timestamp** (all low res)

    Do these values represent flows or (absolute or relative) values of total water used up to time of reading?

- **Electricity readings (from sensors) with timestamp**

    o **Low res (per dorm)** o **High res (per floor)**

    Do these values represent flows (power) or (absolute or relative)

values of total energy used up to time of reading?

Super high res (per room, per outlet, per appliance)? Perhaps requiring login to access

Can resolution be generalized so that the DB supports arbitrarily fine grained measures as technology and policy evolves?

Need to associate sensors and with reported meter readings

2. Sensors (location, target floor)

3. Dorm/building info

Dorm name

Occupancy per floor and/or dorm

Should occupancy be time stamped, since numbers vary during University breaks?

Occupancy per room ? Student assignments to room (perhaps requiring login to access)?

Facilities (e.g.,whether contains dining facilities, lounges, exercise)

First year/upper year/mixed classes (So Jr, Sr, Grad)?

Per dorm, per floor, per room?

4. Ambient (outside) conditions (with timestamp)

- Temperature
- Light
- Precipitation ?
- Humidity ?

5. Record of University breaks since occupancy may vary

6. Web usage stats (which page, source IP, MAC address) and timestamp, to see "who" is accessing the site and various pages on the site (our accesses from the same dorm as occupant dominant, accesses from separate dorms, on or off campus?)

7. IP-to-Real-Address mapping

8. Online Survey (questions? results?) Don't think so, but what about *online comments that could be given by users on dorm/floor energy/water summary websites?*

9. Conversion factors? (e.g., GHG, kWh)