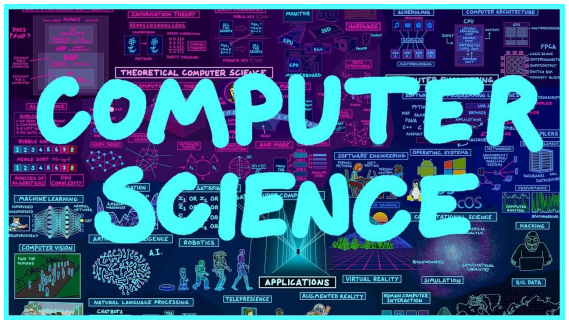

CARE

Creating and Revitalizing Energy

Jaclyn Carifi, Julia Frankenbush, Gloria Kim, Andie Le, Shane Matyi, Alex Sereda & Alli Yocum

Problem

- Concerns over carbon footprint and excessive energy consumption
- Energy costs that help allow the college to provide environmental leadership
- Tool that enables the testing of different scenarios
- Energy consumption and carbon emissions of campus buildings based on Gross Square Footage

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Objectives

- Provide an effective and user friendly database to determine energy usage and consumption
- Determine the environmental and economic impact of TCNJ infrastructure
- Better understanding on energy usage, emissions and factors that lead to energy cost

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Descriptions

End Product

- Use building data (Ex: Age, Operational Hours, Sizes, etc.) to identify energy usage across campus
- Implement such data to predict and estimate energy usage and cost of specific buildings
- Convert input data into output data that users can use to strategize energy consumption

Importance & Need

- Energy prices are increasing, energy sources are decreasing
- Understanding is necessary to forecast energy demand
- Ensures future environmental security as well as economic growth

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Questions

- What is the relationship between cost and emissions?
- How will introducing new structures to the campus affect the emissions and energy consumption?
- Which buildings need to be replaced or rebuilt into something more efficient/sustainable?
- Which structures are located in an area ideal for green energy and will they largely benefit?

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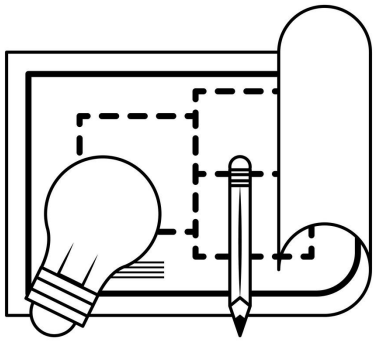
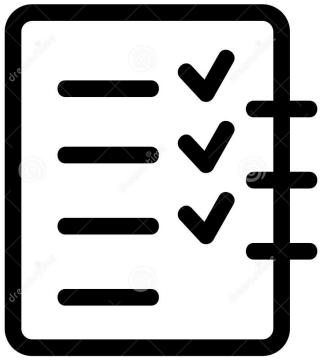
Obtaining Data / Plan

- Identify frequent energy use and loss through comparisons of building attributes, such as energy type or building age
- Find out energy consumption & carbon emissions of campus buildings on a Gross Square Footage basis
- Discovering and using a pattern of energy demand from different campus buildings to have a forecast





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Similar Systems

- ENERGY Star Portfolio Manager: uses benchmarking to measure and compare energy usage between buildings
  - Negative: requirement of benchmark does not include hypothetical future plans
- STARS: transparent, self-reporting framework for universities to measure their sustainability performance
  - Negative: transparency eliminates certain privacy rights
- ESG Investing: considers environmental, social, and governance factors to judge an investment's financial returns and its overall impact
  - Negative: focus on investments prevents experimentation

CARE Approach

- Create a map and build new buildings in order to determine specific costs and emission of energy consumption per building
- Implement current data from buildings to find efficient ways of reducing energy consumption and costs
- Predict future energy consumption and emissions for when a new building is put in place

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We CARE about the sustainability efforts at The College of New Jersey and we want you to participate in ***Creating and Revitalizing Energy!***

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Questions?
Comments?
Concerns?

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