Topic: Assessment and the Prediction of Energy Interventions in Boston

We are working with Boston University Institute for Sustainable Energy (ISE) to take a deep look into the energy intervention measures in the building stock across Boston. To understand how these interventions have historically been and are currently being implemented, we can help the City accelerate its efforts in an equitable manner. Primarily, the project will focus on the historic rates of building interventions and their application across different building stocks and communities. In particular, the analysis will evaluate the location and rates of the applications of these measures to better understand the location decision making process. It requires us to link three existing databases and perform necessary cleaning, so as to answer the following questions, then use the temporal visualization of the data to deliver the evaluation result.

Question:

* Have those energy intervention measures been disproportionately applied in the city?
* What’s the pattern for the disproportionated distribution of the intervention? Is it geographically related or historically related?
* What factors are most strongly correlated to the disproportionated distribution of the energy intervention?
* Are the intervention most likely applied in the wealthy communities rather than undeveloped ones?
* Is the intervention related to the age of the buildings? Is it more common to apply intervention measures in old buildings than the new ones?
* Are the buildings occupied by owners more likely to apply energy interventions than those for rentals?
* Are there more energy efficient actions being performed in some classifications of residences versus others?
* Are there certain intervention measures that are applied more frequently than the others?
* What's the similarity between the two interventions that have the same energy measure?

Datasets:

We will gather the data from following websites, which include the data of the intervention permit, the descriptions of clean energy interventions and the dataset of the buildings in Boston. We will also use some key words that are related to Boston energy intervention to extract the information we need from public database.

1.[Boston permit database](https://data.boston.gov/dataset/approved-building-permits/resource/6ddcd912-32a0-43df-9908-63574f8c7e77) – descriptions of interventions

2.[Mass clean energy center](https://www.masscec.com/public-records-requests) – clean energy interventions

3. [Boston parcel database](https://data.boston.gov/dataset/property-assessment) – location, ownership and value of buildings