# Project Outline

**Bike Sharing Systems:**

Bike sharing systems are a means of renting bicycles where the process of obtaining membership, rental, and bike return is automated via a network of kiosk locations throughout a city. Using these systems, people are able rent a bike from a one location and return it to a different place on an as-needed basis.

These bike sharing programs have gained momentum over past few years. Accessibility and affordability have helped to promote the concept of a short-term bike rental system. Few advantages of Bike sharing systems are reduction of traffic congestion, easier way to commute for tourists, and a healthier population. This makes Bike Sharing system so appealing, and currently, there are over 500 bike-sharing programs around the world.

The data generated by these systems makes them attractive for researchers because the duration of travel, departure location, arrival location, and time elapsed is explicitly recorded. Bike sharing systems therefore function as a sensor network, which can be used for studying mobility in a city.

In this problem, we have a combination of historical usage patterns along with weather data in order to forecast bike rental demand in the Capital Bikeshare program in Washington, D.C. We are provided hourly rental data spanning two years. For this problem, the training set is comprised of the first 19 days of each month, while the test set is the 20th to the end of the month. We have to predict the total count of bikes rented during each hour covered by the test set, using only information available prior to the rental period.

**Data Source:**

<https://www.kaggle.com/c/bike-sharing-demand/data>

**Citation:**

Fanaee-T, Hadi, and Gama, Joao, 'Event labeling combining ensemble detectors and background knowledge', Progress in Artificial Intelligence (2013): pp. 1-15, Springer Berlin Heidelberg

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