**GROUP D: PROJECT PROPOSAL**

**Business Context**

For non-emergencies, civilians in major American cities turn to their local city service hotlines to file for concerns and complaints. These hotlines are vital to residents on a local level because they give them direct access to voice their questions and concerns to the government in their area.

Because big cities house many people, these call centers experience a high volume of calls. In addition, since these concerns are in case of non-emergency, a complaint can be passed through different departments to be resolved (ex. Department of Buildings, The Department of Housing Preservation and Development, etc). The wait times due to high volumes of complaints are frustrating for callers, more so when they do not have an estimate of how long their given situation might take to change. Living in their situation for an extended period of time can lead them to call again to check on their case progress.

Sample situation:

Issues such as not having hot water can’t always be classified as a 911 call, but these prolonged issues civilians face can disrupt their way of living. It is important for families to know when they can expect their lives to be back on schedule again.

**Problem Statement**

Based on records of previous 311 complaints, can we predict how long a complaint will take to resolve?

Using machine learning techniques, we aim to predict how long each complaint will take to resolve based on historical case data. This will help to identify process/workflow inefficiencies when cases exceed prediction time while giving callers an estimated wait time to reduce follow-up calls.

**Benefits**

● Citizens will know when to expect their complaint to get resolved (holds them off from

calling multiple times for the same complaint)

● Building on previous point: 311 call wait times can be optimized because of a less volume of repeated calls

● Departments will be able to gauge any outstanding complaint times (complaints taking

longer than expected)

● These predictions can reveal any underlying issues in the way complaints are handled, such as certain demographics getting their complaints resolved faster than others (ex. rich vs poor neighborhoods, crime in area, types of school in area), or the need for better optimization of employee and resource allocation to improve overall process

**Datasets We Plan to Use (Multiple Regions):**

* Boston 311 Call Center: <https://data.boston.gov/dataset/311-service-requests/resource/f53ebccd-bc61-49f9-83db-625f209c95f5>
* <https://data.boston.gov/dataset/cityscore> (Useful to join with Boston)
* NYC Department of Housing 311 reports:
* <https://data.cityofnewyork.us/Housing-Development/Housing-Maintenance-Code-Complaints/uwyv-629c>
* <https://data.cityofnewyork.us/Housing-Development/DOB-Complaints-Received/eabe-havv>