

Shengyao Xu's Contributions to the Capstone Group Project

Hi Professor,

As the **team leader** for our Capstone project in Group 8, I played a **central** role in **communicating, managing and executing various coding** of the project to ensure its successful completion. My contributions included:

1. Team Coordination and Project Management:

I served as the **primary contact for submissions**, took the lead in **organizing and scheduling group meetings**, and ensured all members were informed and participated on time. I closely **monitored project milestones** and **deadlines**, providing regular reminders to keep the project on track.

2. Data Acquisition and Automation:

I was responsible for **locating and downloading the required project data** manually. What's more, I **developed two automated methods for data downloading by using APIs**, which significantly enhanced efficiency and reproducibility.

3. Data Cleaning and EDA:

I conducted comprehensive **data cleaning**, including standardizing column names, removing irrelevant fields, and correcting geographic fields such as ZIP codes and City Council Districts using shapefiles. Additionally, I performed a spatial joint to add the "Owner Name" column and transformed the dataset into an aggregated format suitable for Power BI dashboard integration. I also **created a SARIMA model** to predict the trend of the syringe requests in the near future.

4. Power BI Dashboard Development:

I **created the Power BI dashboard** and **beautified the UI** by defining and implementing multiple key performance indicators (KPIs), such as On-Time Rate, Completion Rate, Over 48 Hours, Response Hours, Opening Cases, and Closed Cases. I designed and created several visualizations, including:

- A bar chart and map for **Request Geographical Comparison**
- A line chart for **Request Trend Comparison by Year**
- Bar charts for **Syringe Request Counts by City Council District** and **Request Counts by Owner Name**
- A **Time Trend Prediction Analysis**

5. Presentation and Documentation:

I actively **participated in all of the group assignments**, the final project presentation and co-authored the project report and PowerPoint slides.

6. ReadMe text file and Final Deliverables:

Additionally, I **organized and renamed all deliverables for submission** and **prepared a detailed README file** to ensure clarity, reproducibility, and future usability of our work.

Reflections on My Works

In reflecting on this project, I have identified several areas where I will focus my future efforts. I aim to develop more policy-oriented KPI indicators that provide meaningful insights for public decision-making. Expanding the dataset to include the years 2018 to 2025 will allow for more comprehensive and longitudinal analysis. Additionally, I plan to strengthen my technical capabilities by building robust data pipelines, improving my proficiency in SQL, working with online servers, and creating integrated analytics systems. These improvements will help me pursue more advanced work in the field of data analytics and make greater contributions to real-world applications.

I also truly appreciate my teammates for their active participation, dedication, and the positive, encouraging atmosphere they helped create—it really motivated me throughout the project. Throughout this project, I have worked with great care, commitment, and a strong sense of responsibility—not only completing technical tasks but also taking the lead in team coordination and project management. I sincerely hope that my dedication and contributions will be reflected in my final grade. A strong evaluation from this course will not only affirm my hard work but also support my future growth in both career development and the data analytics profession.

Thank you so much for your instructions and the great platform for me to practice my skills in a Real-Life Project!

Best,

Shengyao Xu

Group 8

Supportive Materials:

A ALY6890 Capstone Group 8 Chat Shared 311_Dashboard_Shen... + Meet now 4 ...

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	ALY6980 Module 4_ Assignment Hrithick Gokul Yeddula (2).pdf	2/11/2025	Hrithick Gokul Yeddula
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	boston_311_needle_program_dataset_cleaned.csv	3/3/2025	Shengyao Xu
	311_Dashboard_Shengyao.pbix	3/3/2025	Shengyao Xu
	311_Dashboard_Shengyao.pdf	3/3/2025	Shengyao Xu

	final_combined_dataset.csv	3/3/2025	Shengyao Xu
	311_Dashboard_Shengyao app.powerbi.com	3/9/2025	Shengyao Xu
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	Final Presentation and update about the dashboard-20250311_1...	3/11/2025	Shengyao Xu
	311 Syringe Requests Dashboard Analysis.docx	Monday	Shengyao Xu
	ALY6980 Module 7 Assignment - Group 8 Mid Term Presentatio... docs.google.com	Tuesday	Shengyao Xu
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	Final presentation discussion meeting2-20250319_190314-Meeti...	Wednesday	Shengyao Xu
	ALY6980 Module 12 Assignment - Group 8 Final Presentation docs.google.com	Thursday	Vidhi Rajeshbhai Mistry
	ALY6980 Module 12 Assignment - Group project report - Googl... docs.google.com	4:41 PM	Shengyao Xu

Mid-term presentation meeting Chat Shared Recap Attendance Breakout Rooms Speaker Coach Q&A +1 [Join](#) 85 4 Meeting details ...

Shengyao Xu joined the conversation.

Shengyao Xu named the meeting Mid-term presentation meeting.

Vidhi Rajeshbhai Mistry and 2 others were invited to the meeting.

2/18 10:07 AM Everyone Tomorrow night at 7:00

Wednesday, February 19

Vidhi Rajeshbhai Mistry 2/19 5:33 PM

Shengyao Xu thank you for scheduling the meeting @

Looking forward to join and discuss more about tomorrow's presentation

See you all at 7

2/19 5:52 PM Great

2/19 6:59 PM Meeting started

2/19 6:59 PM Shengyao Xu started recording to the cloud

2/19 7:02 PM

Capstone & Project Proposal Mid-Term Presentation (Group Assignment)
This assignment is due by Thursday, 5:00 PM EST.
Overview & Rationale
Take this opportunity to identify the work the group has done to this point, why the group has done this work and the results so far.
Instructions

- 10-15 slides total for 12 to 15 minutes presentation
 - You may substitute half of presentation with a dashboard demonstration
 - 2-3 slides per each member's contribution (including summary findings)
 - Several slides on how each member's work contributes to the final group deliverable

2/19 7:19 PM Recording has stopped.

2/19 7:19 PM Meeting ended: 20m 46s

Type a message

Final Presentation and update about the dashboard Chat Shared Recap Attendance Breakout Rooms +5 [Join](#) 884 [Meeting details](#) ...

Tuesday, March 11 3/11 9:11 AM Everyone We will have our meeting at 18:00 today.

Instructions
Submit your Capstone Presentation (PPTX) file.
Your slides should contain appropriate material for 12-15 minutes presentation, which should be about 15 to 20 slides. You should move quickly to cover main points and avoid spending too much time on small details when presenting.

- Title
- **Introduction or outline**
- Data source
- Methods
- **Results or findings - 5 to 10 slides**
- **Conclusion or recommendation**
- References and/or acknowledgements
- Thank you and/or questions (from the audience)

You may choose demo a dashboard or wireframe if that's part of your final deliverables.

Reminder: What else is that everyone in our group might write this part to get a better score.

Capstone Presentation and Update Deliverable Group Assignment
This assignment is due by Sunday 11:59 PM EST.

Instructions
Submit your Capstone Project package. Please attach in a zip file below containing:
 • Analysis doc - contains the list of Public content
 • Data source report (17.12.21).pdf
 • Group project report (17.12.21).pdf
 • Power BI template and its products for report
 • Final analysis document
 • Final presentation dashboard
 • Final presentation video (please include link and duration in the notes field)
 • Reference the report to include links to relevant academic sources
 • The name of your group below enclosed in "Capstone Deliverable Group" values in your group member.

□ 3/11 6:00 PM Meeting started 3/11 6:03 PM

https://app.powerbi.com/links/YyLznlq1?ctid=a8eec281-aaa3-4dae-ac9b-9a398b9215e7&pbi_source=linkShare&bookmarkGuid=220104ac-302d-4398-a9e6-da34e27b8854

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Final presentation discussion meeting2 Chat Shared Recap Attendance Breakout Rooms Speaker Coach +2 [Join](#) 884 [Meeting details](#) ...

Shengyao Xu joined the conversation. Shengyao Xu named the meeting Final presentation discussion meeting2. Vidhi Rajeshbhai Mistry and 2 others were invited to the meeting.

Tuesday 6:53 PM

Everyone I have schedule a meeting at 7:00 tomorrow night.

EveryoneI have schedule a meeting at 7:00 tomorrow night.

EveryoneI have schedule a meeting at 7:00 tomorrow night.

Wednesday

Wednesday 5:34 PM

Everyone We will have a discussion at 7. We need to finish updating our slides before the discussion.

□ Wednesday 7:00 PM Meeting started
 ○ Wednesday 7:03 PM Shengyao Xu started recording to the cloud
 □ Wednesday 7:23 PM Meeting ended: 22m 48s
 ○ Wednesday 7:23 PM Recording has stopped.

Final presentation discussion meeting2 Wednesday, March 19, 2025 7:00 PM - 7:30 PM [View recap](#)

Content   20m 4s Expires in 116 days

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