

CS3 Rubric - Medicaid Case Study

DS 4002 – Fall 2024 – Kayla Nguyen

Due: TBD

Submission format: Upload all deliverables to the GitHub repository
Individual Assignment

General Description: Submit a link of your updated GitHub repository, with all deliverables, to Canvas.

Preparatory Assignments – Brush up on data analysis functions using Python, specifically with time-series analysis.

Why am I doing this? This is your opportunity to exercise the skills of a data scientist to perform an analysis on a real-world problem. Considering the problem context, you

- Course Learning Objective: prepare findings for presentation to your peers.

What am I going to do? You will perform time-series analysis on the data provided in the case study. The goal of this case study is to investigate the relationship between a state's adoption of the Medicaid expansion policy and the impact it could have on the personal healthcare expenses in that state. In order to do this, you will use ARIMA, a time-series analysis tool that can assess the correlation between two given variables. There are multiple deliverables for this project, including

- One page written analysis – in as a PDF
- Github repository – with all scripts and any resulting data uploaded
- Graphics – at least two graphics to support written analysis

All of this will be uploaded to and submitted electronically via a link to a GitHub repository.

Tips for success:

- Consider standardizing the costs. This case study is analyzing whether adopting the Medicaid expansion policy will lower personal healthcare costs for *all* citizens, aside from enrollment in Medicaid. Thus, it is important to consider the different household sizes, costs of living, and populations. A per capita formula as outlined below would be useful.

$$Cost = \frac{\text{Personal healthcare expense per state} * 1,000,000}{\text{State population for that respective year}} \div \text{State's annual salary} * 100$$

- You got this! Don't underestimate your ability, and if you run into issues, search for documentation or other relevant resources on the Internet!

How will I know I have Succeeded? You will meet expectations on CS3: Medicaid Case Study when you follow the criteria in the rubric below.

Spec Category	Spec Details
Formatting	<ul style="list-style-type: none"> Repository – A GitHub repo (and cloud storage folder if necessary) containing all materials <ul style="list-style-type: none"> Submit a link to the repo Everything is contained in the repo or linked to it if appropriate. Contents <ul style="list-style-type: none"> Scripts with all relevant source code, added to a new folder entitled 'SCRIPTS' Graphics uploaded to a new folder entitled 'RESULTS' One page written analysis, also uploaded to 'RESULTS' Any references appended to the README, in IEEE citation format Use PDF format when possible For code and data products use the appropriate format for whatever it is Written Analysis – one page in PDF format, uploaded to the repository and submitted separately <ul style="list-style-type: none"> Must include the created graphics and make some conclusion based on the case study materials Use IEEE citation format for any extra references
Graphics	<ul style="list-style-type: none"> Must be generated using the script that was uploaded to the GitHub <ul style="list-style-type: none"> Can use built-in Python modules Saved as an image (.png or .jpg) and uploaded to the GitHub Descriptive titles
Extra Credit	<ul style="list-style-type: none"> Perform time-series forecasting to predict how personal healthcare expenses may change!

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