Math 361: Individual-Baby Research Project (substituting Midterm).

Due 7th week Wednesday 1:30.

Name:

**The objective** of this is for you to do some baby exploration of real research and data to enhance your learning experiences.

**Outline**: You will find a data that matches to your interests or for the benefit your learning experiences. You will do a baby analysis, write, and present.

**Detailed Expectations and Assessment:**

* Find a relatively **large** (minimum 100 observations) size data with at least **four to five** variables where at least one has to be a categorical variable. *(Note: If you have a data that is desirable, but does not meet this condition, then communicate with me for permission.)*
* A minimum **four to five** pages long.
* **Clear and genuinely** written by you, not just copy and paste simply from other people’s work or ChatGPT.
* You **can** use other people’s ideas and codes, but demonstrate with some variations not to pretend it is your work.
* Define **variables** clearly.
* **Demonstrate** the codes with methods we studied in the class:
  + Importing data
  + Use Python libraries properly.
  + Find descriptive statistics.
  + Do some visualizations.
  + Be able to utilize various resources on Internet including library documentations.
  + Demonstrate with at least one **new method** we have not studied in class.
* Include the **list of resources** at the end.
* You will **share** yours in class on the 7th week Wednesday – five minutes baby presentation.
* Submit your paper in pdf on Moodle and also submit a printed copy in class on the 7th week Wednesday.
* Follow the format on the next page.

1. Introduction
2. Explain what this data is about and why you chose this data.
3. Definitions of the variables, including units if applicable.
4. A snapshot of the data.
5. Import the data into your computer and demonstrate multiple aspects of the following items with outcomes and codes.
6. Various numerical descriptive statistics. Apply at least a new method we have not talked about in class.
7. Various visualizations of the data. (At least two or three required)
8. Address some potential future ideas for analysis if you have one.
9. A short list of bibliography