CTIS 365: Spring 2022-2023
Homework + Term Project

> *Disciplinary action will be taken for PLAGIARISM and CHEATING. CHEATING does not only cover exams, but also include sharing your homework, term project with other students.*

1. The term project will be completed in 3 phases. The first 2 phases will be graded as homework1 and homework2, whereas, the final phase will be considered as the term project. The first 2 phases will be completed together and will be submitted on 24th May 2023.

2. Form a project team composed of maximum 2 members. This team will remain the same throughout the semester.

Phase I (Due 24th May 2023)

1. Select and state the topic of your term project. You can use the course Moodle page to explore some of the project topics by inspecting the **Project Ideas** section. Your project area does not need to be restricted to the suggested topics. You can use a completely new subject of your choice.

2. Find between **8-10** different scientific journal papers and/or URLs that are related to your project topic and write a **4-6** pages summary explaining your topic and the important parameters that are required to conduct the study. The type of dataset (data related to your country is preferred, if you will use any other data you need to provide a justification for it) and its source that you will use to conduct your project, the work that has been done related to your selected topic (use the scientific journal papers and/or URLs for this purpose) and what do you plan to do in this project. Please keep in mind that you can produce results similar to the already existing ones but you need to provide some new contributions (for example you might use different and enhanced graphics or tables etc.).

3. To search scientific journal papers related to your topics you can use the following databases
   - Web of Knowledge
   - Science Direct
   - Scopus
   - IEEE
   - ACM

4. All resources cannot be of the same type i.e., all **8-10** different items cannot be just papers or URLs.

5. Provide a reference for the used resources (papers and URLs) in your summary. Use the below given link for citation formatting guidelines.

6. Each team or an individual must meet the instructor to discuss the proposed project and get feedback on their first report within 10 days of the submission deadline. The homework grade will be announced to the students at the end of the meeting. Those individuals or teams who miss the meetup will get 0.

Phase II (Due 24th May 2023)

1. You need to collect, clean and prepare the data to be used in your project.

2. You need to mention the source(s) of your data and should **only use R and RStudio** for the data preparation phase.

3. Provide **descriptive statistics** of your data (see the uploaded paper for reference).

4. Provide a **citation for the data** by using the guidelines provided in the below given link.

5. Provide a **graphical abstract**. See the course Moodle page for a sample image.

6. Produce frequency distribution tables and/or graphs again by using **only R and RStudio** to present results of your dataset. All graphs must be created using the **ggplot package**. Remember the graph plotting is more of an exploratory phase rather than the explanatory phase, hence, the produced plots do not need to be professional looking at this stage. You will refine them in the final phase of the project.

7. Each team or an individual must meet the instructor to discuss this phase of the project and get feedback on their second report within 10 days of the submission deadline. The homework grade will be announced to the students at the end of the meeting. Those individuals or teams who miss the meetup will get 0.

Phase III (Due 11th June 2023)

1. Write a term project report in a paper format (see the below given link) or create a Blog containing the refined contents from Phase I and Phase II together will additional results and explanation. Keep in mind that you should use good data visualization and presentation skills here as they are the key for a good Blog or paper. While grading this phase, quality of work, presentation style, used visualization methods and formatting will be considered important.

2. Things to be uploaded to the course Moodle page inside a zip folder
    a. The LaTeX and pdf file or word file.
    b. R-script(s) used to generate graphs, tables or maps.
    c. Data file.

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