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| https://lh6.googleusercontent.com/ENp5iVIZzIHv2b4n4mkS4vHt4UkEBlWYmz738CY-LLW4hqPglKHQ6jUh7UR0d4Ymmrr709Maa1nSxWlKGCsAkajArO1QhFOMQzxwHhEhk0zqlMRi4_H7oj2RIxwzkiz_qKiY_Giy | **Work Integrated Learning Programmes Division**  **M.Tech (Data Science and Engineering)** |

**Data Visualization & Interpretation   
(DSECL ZG555))**

**Assignment 1 – [AIR QUALITY ANALYSIS] - [Weightage 12%]**

1. **Problem Statement**

The air quality index (AQI) is an index for reporting air quality on a daily basis. It is a measure of how air pollution affects one's health within a short time period. The purpose of the AQI is to help people know how the local air quality impacts their health. The pollutants monitored are Sulphur Dioxide (SO2), Nitrogen Dioxide (NO2), Particulate Matter (PM10 and PM2.5),Carbon Monoxide (CO), Ozone(O3) etc.

**Central Pollution Control Board**is executing a nation-wide programme of ambient air quality monitoring known as National Air Quality Monitoring Programme (NAMP) and you are part of the project. As part of the programme, below data has been collected.



Source: This data has been published on Open Government Data platform India by the Ministry of Environment, Forest and Climate change, and is updated periodically.

You have been tasked to perform an analysis of the data and present the results to the **Chairman of** **CPCB**. With the given context, you need to create a dashboard using TABLEAU. (Use the concepts learned in the class).

**The objectives include**

**Demonstrate the VISUALISATION CONTEXT**

1. **WHO?KNOW YOUR AUDIENCE(First 2 questions are answered for you)**
2. List the primary groups or individuals to whom you’ll be communicating.

**CPCB**

1. If you had to narrow that to a single person, who would that be?

**CPCB CHAIRMAN**

1. What does your audience care about?
2. What action does your audience need to take?
3. What is at stake? What is the benefit if the audience acts in the way you want them to? What are the risks if they don’t?
4. **WHAT?**

* What are you trying to communicate? What questions are you trying to answer/display in your visualizations? Write these as specific questions. You need to come up with 3 questions at least, each of which will be answered using one Viz.
* **Data preparation needed to answer the specific queries must be done.**

1. **Present the BIG IDEA**.

* It should: (1) articulate your point of view, (2) convey what’s at stake, and (3) be a complete (and single!) sentence.

1. **HOW?**
   1. Chart 1: What type of viz did you create? Why did you select the viz that you did?
   2. Chart 2: What type of viz did you create? Why did you select the viz that you did?
   3. Chart 3: What type of viz did you create? Why did you select the viz that you did?
   4. For each of the Visualisation, identify at least 3 Gestalt principles employed.
   5. For each of the Visualisation, mention how you strategically used pre-attentive attributes to draw the audience's attention.
2. **Create your dashboard**
3. **Deliverables**

Zipped file containing

1. The word doc with answers to question 1 through 4 above.
2. The tableau workbook(.twbx) with 3 Sheets(Each sheet should have 1 visual) and 1 Dashboard comprising all three visuals.
3. The source file after preprocessing(if any).

The file name should be the respective group name.

1. **Deadline**

* The strict deadline for submission of the assignment is <**Feb 12, 2023**> **EoD.**
* Late submissions won’t be evaluated.

1. **How to submit**

* This is a group assignment.
* Each group consists of up to 3 members. All members of the group will work on the same problem statement.
* Each group should zip the deliverables and upload in CANVAS in respective locations under ASSIGNMENT Tab.
* Assignment submitted via means other than through CANVAS will not be graded.

1. **Evaluation**

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| **Sl. No** | **Criteria** | **Description** |
| 1 | Know your audience.  (10%) | * Getting to know our audience and understanding their needs and what drives them is an important early part of the process for successfully communicating with data. |
| 2. | WHAT?  Effective Formulation of Contextual Questions  (25%) | * Identify what needs to be communicated very clearly and frame the questions accordingly justifying the context. |
| 3 | BIG IDEA (10%) | * The Big Idea can help us get clear and succinct on the main message we want to get across to our audience |
| 4 | Choice of appropriate visuals  (25%) | * Identify the appropriate visuals for communicating the message |
| 5 | No clutter in the visuals  (10%) | * The visuals presented should not have any unwanted elements that reduces the understanding of data |
| 6 | Audience attention  (10%) | * The visuals presented should have the right kind of visual cues that helps the audience to focus the attention wherever required. |
| 7 | Dashboard in Tableau  (10%) | * Use Principles of Effective Dashboard Design to come up with an interesting Dashboard |

**ALL GROUP MEMBERS WILL BE CREDITED THE SAME MARKS. IT’S INDIVIDUAL’S RESPONSIBILITY TO ENSURE HIS/HER PARTICIPATION AS WELL AS TEAM’S RESPONSIBILITY TO ENSURE EVERYONE’S PARTICIPATION.**