

## **Assignment:**

### **Title: Data Science (Mentor And Development)**

**Objective: To showcase your data science, machine learning, teaching, and problem-solving skills.**

### **Tasks:**

#### 1. Data Science and Machine Learning

- Develop a machine learning model in a Jupyter notebook using a dataset of your choice.

This should include data preprocessing, model training, and model evaluation.

#### 2. Teaching and Mentoring

- Prepare a 10-minute video explaining the key steps in your Jupyter Notebook to an audience with basic Python knowledge.

#### 3. Problem Solving

- Write a short guidance note explaining feature selection techniques in machine learning to a hypothetical student struggling with the concept.

### **Submission:**

- Upload your Jupyter notebook, video, and guidance note to a public GitHub repository and provide the link.

### **Evaluation:**

- Your work will be assessed on the quality of the machine learning model, the clarity of your video explanation, and your approach to problem-solving in the guidance note.

### **Deadline:**

- The assignment should be completed and submitted within three days from the date of receipt.

### **Assessment Questions:**

1. Explain how you would handle missing data in a given dataset and provide a code snippet demonstrating this.

2. Prepare a high-level lesson plan for an introductory session on deep learning.

3. How would you troubleshoot a machine learning model whose performance isn't as expected? Discuss your approach briefly.

4. Explain in simple terms what Natural Language Processing (NLP) is and its real-world applications.

5. Write a SQL query to retrieve specific information from a relational database. The schema will be provided

**Deadline: July 15, 2023**

Post completion please submit the project here <https://forms.gle/dLxkgrssC6TbkRNS8>