Assignment: Independent Research White paper/Proposal & Presentation

I.   Objective:

This assignment requires you to develop a well-structured research proposal outlining your study's objectives, methodology, expected outcomes, and a research timeline. You will also deliver a short presentation summarizing your proposal.

Assignment Components & Grading:

- **Written Research Proposal (60 points)** – A concise, structured document (maximum **three pages**) detailing your research plan.

- **Presentation (40 points)** – A clear and engaging presentation summarizing key aspects of your research.

II.   Part 1: Research Proposal (60 points)

Proposal Structure (Maximum three pages excluding references and Gantt chart)

1. **Title:**

   o   Provide a clear and precise title reflecting your research focus.

2. **Abstract (150 words max) [5 points]**

   o   Summarize the research problem, objectives, methodology, and expected outcomes.

3. **Introduction (400 words max) [10 points]**

   o   Background and context of the research problem.

   o   Importance and motivation for the study.

   o   Research gap and justification for the study.

   o   Research questions and hypotheses (if applicable).

4. **Objectives (100 words max) [5 points]**

   o   Clearly define four key research objectives in bullet points.

5. **Methods and Activities (250 words max) [15 points]**

   o   **Data Collection & Preparation:**

       ▪   Expected data sources, types, and preprocessing methods.

- o **Model Development:**
  - ▪ Description of the selected model and justification for its choice.
- o **Evaluation Metrics:**
  - ▪ Criteria for assessing model performance, trustworthiness, and reliability.

6. **Anticipated Results (150 words max) [10 points]**
   - o Describe expected findings, potential challenges, and their impact.

7. **Schedule (Gantt Chart – One Year) [10 points]**
   - o Include a clear Gantt chart outlining key milestones (e.g., literature review, data collection, model development, evaluation, and reporting).

8. **References [5 points]**
   - o List key sources using a consistent citation style (APA/IEEE).

Submission Guidelines:

- **Format:** Typed, 12pt font, Times New Roman, 1.5 line spacing.
- **Length: Maximum of three pages** (excluding references and Gantt chart).
- **File Type:** PDF or Word document.
- **Deadline:** [April 16th]
- **Submission Platform:** via canvas
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III.   Part 2: Presentation (40 points)

Presentation Requirements

Each student will deliver a **5-7 minute** presentation summarizing their research proposal. The presentation should include:

1. **Title Slide & Introduction (5 points)**
   - o Briefly introduce your research topic and motivation.

2. **Objectives (5 points)**
   - o Clearly state the four research objectives.

3. **Methodology (7 points)**

- o Summarize key methods, including data collection, preprocessing, model development, and evaluation.

4. **Anticipated Results & Impact (5 points)**

   - o Discuss expected findings, potential challenges, and research significance.

5. **Schedule Overview (3 points)**

   - o Briefly outline the research timeline using a simplified Gantt chart.

6. **Delivery & Clarity (15 points)**

   - o Ensure clear communication, proper pacing, and engaging visuals.

Presentation Format & Submission:

- **Slides:** Maximum **6-8 slides** (PowerPoint, Google Slides, or PDF).

- **Presentation Mode:** In-class

- **Submission Deadline:** [[April 16th].

IV.   Evaluation Breakdown (Total: 100 points)

- **Research Proposal: 60 points**

- **Presentation: 40 points**

Note: You are welcome to expand on the idea from **Question 4 of Homework 2** or develop a new research concept from scratch.