REQUIREMENTS

- Solutions must aim to create a research-driven plan that effectively and feasibly addresses challenges related to the integration of AI in healthcare systems, including at least 1-2 major issues such as algorithmic bias, data privacy, or ethical dilemmas!
  a. Feel free to dive into past research foundations such as AI applications in medicine, Clinical decision support, and social and ethical impacts of AI in healthcare.
  b. Keep in mind that the solution must be cost-effective and quick
  c. What specific AI-related healthcare problem are you addressing? What research methods or interventions will you use to solve it?
  d. Solutions can also include political and economical repercussions
  e. How is your approach different?
  f. Has your approach been done before? If so, how will you re-invent and innovate it?
- As AI is a rapidly evolving technology, your solution should focus on optimizing its use and addressing risks rather than attempting to "cure" AI-related issues outright, though improvements on existing AI methodologies are encouraged as part of your plan.
- You must justify your solution by explaining how it will work and support your explanation with scientific data and evidence from peer-reviewed sources. You may reference AI applications in diagnostics, patient care, or health data management.
  a. Describe possible experimental designs or clinical trials necessary to test your solution, including sample size, control groups, and timeline for evaluation.
  b. How will you test or benchmark your project's effectiveness?
  c. What experiments or studies will you conduct to assess the key features of your solution? (For example, testing an AI algorithm's accuracy against current diagnostic standards.)
  d. What will you compare your solution to? (For example, comparing your AI model to existing models or human clinician performance.)
  e. What quantitative data will you collect during testing?

      f.   If your testing involves human subjects, what ethical considerations and physiological or psychological outcomes will you monitor closely?

      g. What public health initiatives would you propose to promote ethical and equitable AI integration? Consider both small-scale (individual, community) and large-scale (national, global) efforts.

- Address both the advantages and limitations of your solution.
    a. How would you design your project and implement your research plan?
    b. What aspects of biology, medicine, data science, or AI technology does your solution leverage?
    c. Do you foresee any limitations or risks associated with your solution? How would you mitigate them?
    d. Social and Ethical Challenges
        i. What are the benefits and drawbacks for patients and healthcare providers when using your AI solution? How would you weigh these factors in deciding to move forward?
        ii. Is your solution financially accessible to diverse populations or only a select few? Is this equitable, and should the project continue given this?
        iii. Who else besides patients will be affected by your solution, and how?
        iv. If your project involves human trials, how will you ensure ethical testing and mitigate risks for participants?
        v. If your project involves policy or regulation, how do you anticipate public and governmental reactions? Will there be challenges in reaching international or cross-sector agreements?
- A minimum of 5 reputable scientific sources (e.g., PubMed, IEEE, journals on AI in medicine) must be used. All sources must be cited in MLA format on your final submission.
- This project must be completed in groups of 3 to 5 people.
- Your project should include an argumentative component, providing evidence-backed reasons why your solution will effectively address the AI integration challenges, and also include a counter-argument discussing potential criticisms or limitations.

All completed projects must be submitted **by December 15, 2025.** Your submission may take place in the form of:

- A presentation (Slideshow)
- Pre-Recorded Video
- A document
- Visuals & Graphics
- Other (email us at thepremedscene@gmail.com for approval)