# Project Design Phase-I
# Proposed Solution

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| Date | 21 July 2025 |
| Project Name | FetalAI: USING MACHINE LEARNING TO PREDICT AND MONITOR FETAL HEALTH |
| Maximum Marks | 2 Marks |

| S.No. | Parameter | Description |
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| 1. | Problem Statement (Problem to be solved) | The primary problem is to accurately predict and monitor fetal health to reduce child and maternal mortality rates. Many deaths could be prevented with timely and accurate health monitoring, particularly in low-resource settings where advanced medical equipment and expertise are scarce. |

| 2. | Idea / Solution description | FetalAI leverages machine learning to analyze Cardiotocograms (CTGs) and predict fetal health status. By utilizing a dataset with characteristics of fetal health, the model classifies the fetal state into 'Normal', 'Pathological', or 'Suspect'. This enables healthcare professionals to intervene promptly, ensuring better health outcomes for both the mother and the child. |
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**Proposed Solution:**

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| 3. | Novelty / Uniqueness | The uniqueness of FetalAI lies in its combination of cost-effective CTG monitoring with advanced machine learning algorithms to provide accurate and real-time predictions. This approach offers a scalable and affordable solution that can be deployed in low-resource settings, where the majority of preventable deaths occur. |
| 4. | Social Impact / Customer Satisfaction | FetalAI aims to significantly reduce child and maternal mortality rates by providing early and accurate predictions of fetal health. The solution is designed to be user-friendly, making it accessible for healthcare professionals with varying levels of expertise. By improving health outcomes and saving lives, FetalAI ensures high customer satisfaction and contributes to achieving the UN's Sustainable Development Goals. |
| 5. | Business Model (Revenue Model) | The revenue model for FetalAI includes:<br><br>● Subscription-based access to the software for hospitals and clinics.<br>● One-time purchase options for individual healthcare providers.<br>● Licensing agreements with medical device manufacturers.<br>● Grants and funding from health organizations and NGOs focused on maternal and child health. |

| 6. | Scalability of the Solution | |
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| | | FetalAI is highly scalable due to its reliance on readily available CTG equipment and cloudbased machine learning models. It can be easily implemented in various healthcare settings, from rural clinics to urban hospitals, without significant infrastructure investments. The solution can also be continuously improved with more data and advancements in machine learning techniques, ensuring its long-term viability and effectiveness. |