



ADITYA UNIVERSITY

(Formerly Aditya Engineering College (A))

PROJECT VISION DOCUMENT	
TITLE OF THE PROJECT	SOOTH EASE - An IOT-Driven Smart Cradle for Baby's Comfort and Well-Being
VISION (problem the project solves and its impact on the users or stakeholders.)	To revolutionize infant care by creating an IoT-enabled smart cradle system that seamlessly combines automation and real-time monitoring to enhance the comfort and well-being of babies. The system will empower parents with timely alerts and automated responses to address their baby's needs, ensuring a safe, soothing, and stress-free caregiving experience. Through innovation and convenience, this project aims to redefine how parents interact with traditional baby cradles, making them more efficient and responsive.
USERS/ACTORS OF THE SYSTEM (Identify who will interact with the Project) (e.g., end users, administrators, third-party services).	Parents/Caregivers: Parents and caregivers are the primary users of the smart cradle system, utilizing its features to monitor the baby's comfort and safety. HealthcareStaff: Healthcare professionals in hospitals or childcare facilities act as secondary users, leveraging the smart cradle system to monitor infants in a group or specialized care setting. SupportingServices: IoT platforms enable real-time notifications and monitoring, while sensor and hardware providers supply components like moisture, motion, and temperature sensors to power the system's features.
SYSTEM FEATURES & FUNCTIONAL CAPABILITIES (Describe the key features and functionalities the project will provide)	Timely Oscillation of the Cradle: Implement a system to automate the cradle's oscillations at regular, pre-configured intervals to ensure the baby remains calm and comforted. Moisture Detection and Notification: Integrate moisture sensors to detect wet conditions in the cradle, triggering alerts to parents for prompt action. Motion-Triggered Oscillation: Enable the cradle to detect baby movements and initiate oscillations automatically to soothe the baby in moments of discomfort or restlessness. Temperature Monitoring and Notification: Integrate a temperature sensor to continuously monitor the cradle's environment, ensuring the baby's comfort.
Technologies/Tools to be Used (List the programming languages, frameworks, and tools to be used.)	Programming Languages: For microcontroller programming. Frameworks: Arduino IDE, Blynk IoT Platform. Hardware Components: ESP32 microcontroller,



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	<p>MG995 Servo Motor, MPU6050 accelerometer, DHT22 temperature sensor, Soil Hygrometer sensor, Relay Module.</p> <p>Development Tools: Breadboard, jumper wires, power supply modules.</p> <p>Cloud Services: Blynk.io for real-time notifications and monitoring.</p>
<p>Third Party libraries /APIs/Services to be used (Mention external libraries, APIs, or services that will be integrated.)</p>	<p>Blynk IoT Platform API – For real-time notifications and remote monitoring of the cradle system.</p> <p>MPU6050 Library – To read data from the MPU6050 accelerometer and gyroscope.</p> <p>Arduino Servo Library – For controlling the MG995 servo motor to automate cradle oscillation.</p> <p>WiFi Library (ESP32) – To enable Wi-Fi connectivity for remote data access and communication with Blynk.</p>
<p>Final Deliverable must Include (List all the components of the final deliverable) Example:(Softcopies</p> <ol style="list-style-type: none">1.Complete Project with Code with explanation steps,2.Technical Documentation3.PPT4.Published/Final research paper)	
<p>Documents (Specify the documents to be submitted along with the final deliverable.)</p>	

Signature of the Guide: -

Dr. K.Swaroop, M.Tech., Ph.D.
Associate Professor & HOD

TEAM MEMBERS

1. M.S.L.SAI SRAVANTHI (22A95A0513)
2. V.KARTHIK BABU(22A95A0519)
3. B.MANI KANTA (21A91A05B2)
4. T.V.V.SATYA TEJA (21A91A05A1)