

UNIVERSITY OF ENGINEERING AND TECHNOLOGY, TAXILA
FACULTY OF TELECOMMUNICATION AND INFORMATION ENGINEERING

PROJECT PROPOSAL
ANTI SLEEP ALARM SYSTEM



SUBMITTED TO:
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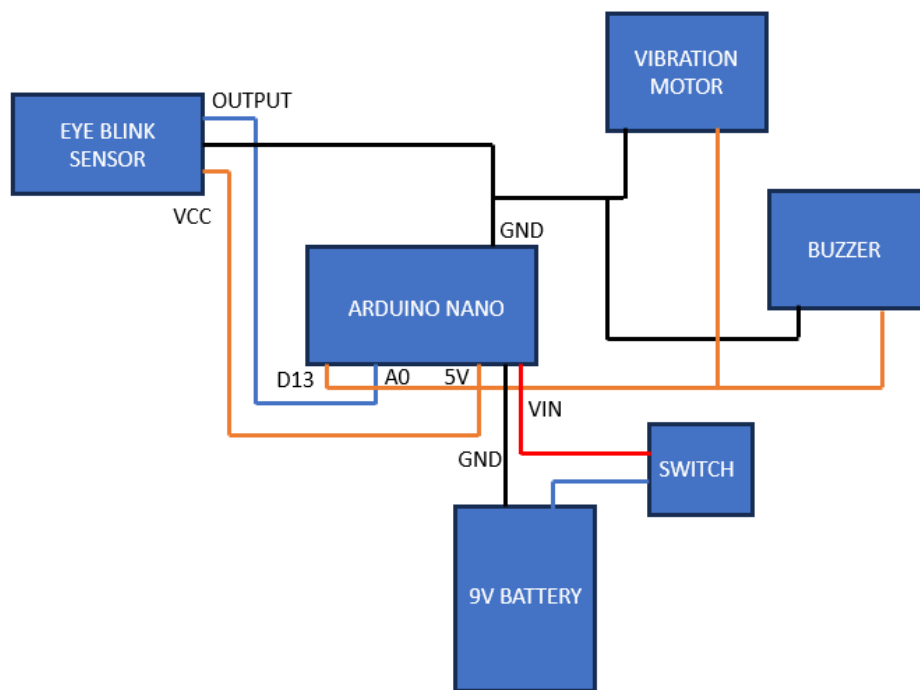
Anti-Sleep Alarm for Driver Safety

Introduction

Driver fatigue is a critical factor contributing to road accidents. The proposed project addresses this issue by creating a portable and efficient Anti-Sleep Alarm system that can be easily worn by the driver. The system constantly monitors the driver's eye blinks and physical alertness. When fatigue is detected, an alarm is activated to awaken the driver, preventing potential accidents. This proposal outlines the development of a cost-effective Anti-Sleep Alarm system for driver safety. The system utilizes an Eye Blink Sensor integrated into goggles, an Arduino Nano microcontroller, a Vibration Sensor, and a Buzzer to detect signs of driver drowsiness. When the driver shows signs of fatigue, such as excessive eye blinking, the system triggers an alarm to alert the driver, mitigating the risk of accidents caused by sleepiness.

Block Diagram

The following block diagram illustrates the components and their interactions in the Anti-Sleep Alarm system:



List of Components

The project will require the following components:

1. **Eye Blink Sensor**

This integrated sensor will be used to monitor the driver's eye blinks and is crucial for detecting fatigue.

2. **Arduino Nano**

The microcontroller responsible for processing sensor data and controlling the alarm.

3. **Buzzer:**

An audible alarm component to alert the driver when fatigue is detected.

4. **SPST Switch**

5. **Goggles**

6. **Vibration Sensor**

Project Timeline:

Week 1: Project Planning and Component Acquisition

Week 1 (Days 1-7):

- Define project objectives, goals, and requirements.
- Create a basic project plan with key tasks and milestones.
- Research and select suppliers for the components.
- Presenting the proposal

Week 2: Component Integration and Basic Testing

Week 2 (Days 8-14):

- Receive and inspect the components.
- Set up a dedicated workspace for the project.
- Begin assembling the hardware components, starting with the Eye Blink Sensor and Arduino Nano
- Establish basic electrical connections and verify the power supply.
- Develop and upload initial code to the Arduino Nano for basic functionality.

Week 3: Software Development and System Integration

Week 3 (Days 15-21):

- Complete the integration of the Vibration Sensor and Buzzer into the prototype.
- Develop and refine the software code to integrate data from the sensors.
- Implement algorithms to detect eye blinks and driver alertness.
- Conduct initial testing of the integrated system.

Week 4: Testing and Calibration

Week 4 (Days 22-28):

- Conduct extensive testing under controlled conditions, simulating driving scenarios.
- Calibrate the system to reduce false alarms and enhance accuracy.
- Make necessary adjustments to the hardware and software based on testing results.
- Begin documenting test procedures and results for reference.

Week 5: Finalization and Documentation

Week 5 (Days 29-35):

- Make final adjustments and optimizations to the system based on feedback from testing.
- Prepare basic documentation, including user manuals and wiring diagrams.
- Finalize the project report, including an overview, objectives, methodology, and initial results.
- Conduct a final review and validation of the complete Anti-Sleep Alarm system.

Week 6: Project Presentation and Evaluation

Week 6 (Days 36-42):

- Prepare a brief presentation summarizing the project for demonstration if required
- Deliver a project presentation to showcase the Anti-Sleep Alarm system if required
- Complete any remaining project documentation and submit the project report.