**CONTRIBUTION**

Driver sleepiness and distraction is widely acknowledged as a contributing factor in the rising incidence of incidents on today's roads. Many researchers have confirmed this proof by demonstrating links between driver tiredness and traffic accidents. Although it is difficult to establish the actual number of drowsy driving accidents, it is most likely to be underestimated. The preceding remark demonstrates the need of doing research with the goal of minimizing the risks of accidents caused by drowsiness. Researchers have attempted to model the behavior so far by establishing correlations between tiredness and key vehicle and driver indicators.

**PRODUCT PERCEPTIVE**

Technical Feasibility

It is a measure of the particular technological approach and of the availability of knowledge and technical services. It is one of the first studies that must be performed after the selection of a project.

Operational Feasibility

Operational viability is primarily concerned with concerns such as if the device will be used if it is created and implemented and if user reluctance will impact the future advantages of the technology. It is the ability to utilize, assist and execute a system or program's required tasks

Simplicity: User friendly.

Accuracy: In general, performance data obtained using sampling techniques are less accurate than data obtained by using counters or timers. In the case of timers, the accuracy of the clock must be taken into account.

**USER REQUIREMENT**

Performance: Several performance requirements were established, checking for inputs, outputs and working

Serviceability: system setup was designed to be easily replaced if damaged

Economic: A less-than ideal control unit was selected due to economic limitations

Environmental: No harm for environmental parameters

Social: Feasibility for everyone in day to day life

**TEST CASES**

**Capture video Test case:**

|  |  |
| --- | --- |
| Test Case | 1 |
| Name of Test | Video capture |
| Input | Web camera index |
| Expected output | Video feed from select camera |
| Actual output | Video output displayed from selected camera input |
| Result | Successful |

**Find face landmarks Test case:**

|  |  |
| --- | --- |
| Test Case | 1 |
| Name of Test | Facial landmarks |
| Input | Input image to be processed and facial landmarks dataset |
| Expected output | Display facial features and plotting on to the input image |
| Actual output | Image with all the face features plotted and highlighted |
| Result | Successful |

**Extracting eye features Test case:**

|  |  |
| --- | --- |
| Test Case | 1 |
| Name of Test | **Extracting eye features** |
| Input | Input image and face landmarks |
| Expected output | Left and right eye extracted |
| Actual output | Both the eye were extracted successfully from input image |
| Result | Successful |

**Extracting Mouth Features Test case:**

|  |  |
| --- | --- |
| Test Case | 1 |
| Name of Test | **Extracting Mouth features** |
| Input | Input image and face landmarks |
| Expected output | Mouth points extracted |
| Actual output | Mouth points extracted successfully from input image |
| Result | Successful |

**Output display Test case:**

|  |  |
| --- | --- |
| Test Case | 1 |
| Name of Test | **Output display** |
| Input | MAR ,EAR |
| Expected output | Plotted facial features on user input face |
| Actual output | Facial features plotted on user face input |
| Result | Successful |

**Audio alert Test case:**

|  |  |
| --- | --- |
| Test Case | 1 |
| Name of Test | **Audio alert** |
| Input | EAR and MAR values |
| Expected output | Audio output when values exceed threshold |
| Actual output | Audio output heard on values exceeded |
| Result | Successful |