## Work Plan and Budget

First, we got a few meetings with our group members and project coordinator to finalize the project. Then, we finalized the project as Wireless Red Signal Alerting System for Trains using the NRF module.

Then, started to create a project proposal and submit to evaluation purposes.

Some researched papers are red and hope to study more regarding this project for implementation.

Our plan to find the hardware specifications to implement the model design. Although here I attached the basic budget for the project, we hope to find sensors and other hardware requirements free or low budget from the faculty, friends, and ourselves. The timeline also can vary according to the requirements of the project coordinator and the module coordinator.

### Budget plan

|  |  |  |
| --- | --- | --- |
| **Component** | **Quantity** | **Price (Rs.)** |
| NRF24L01+PA+LNA 2.4G Wireless Transceiver Module with SMA Antenna | 2 | 1800 |
| Arduino UNO Normal Development Board | 1 | 1950 |
| Arduino Nano V3.0 Normal CH340G Mini USB | 1 | 1600 |
| Obstacle Avoidance Sensor IR Infrared Module | 2 | 360 |
| Servo Motor | 1 | 680 |
| Cables and Connectors | - | 100 |
| LED | 1 | 20 |
| Switch | 1 | 120 |
| Buzzer Module (Small) for Arduino | 1 | 120 |
| **Total** | **-** | **6750** |

## Significance and Implication of the Project

In Sri Lanka, there are a number of accidents have been reported due to errors of the Wireless Red Signal Alerting System for Trains using the NRF module. So, we understand the usual system is very expensive. Therefore, we decided on a simple system created using the NRF model and simple electrical components that won't be expensive and will be more accurate as well.

And using the usual railway red light system can only be used to notify whether the train comes or not. Because it's hardware implementation. But using software implementation lot of things we can track. Those are the speed, and the traffic whether there are vehicles close to the rail gate or not. Likewise, so it's open to a lot of updates rather than using the usual red-light system. And if we want, we can implement this system to give notifications to train drivers as well. In the usual system, they should hold a nonstop watch for any red signal that whether there is a red-light signal or not. But using this NRF system we can update this system to a more user-friendly way.

The basic idea of using this kind of NRF system, it's more accurate and inaccurate expensive compared to the usual red light signal alert system.