



**SMART INDIA  
HACKATHON  
2022**

# Basic Details of the Team and Problem Statement

Organization Name: Coal India Limited.

PS Code: NC741

Problem Statement Title: A system of IoT devices to measure load weight in a dumper.

Team Name: Key Puncher

Team Leader Name: Saumya Arora

Institute Code (AISHE): C - 25092

Institute Name: JIET institute of Design and Technology

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Theme Name: Transportation & Logistics

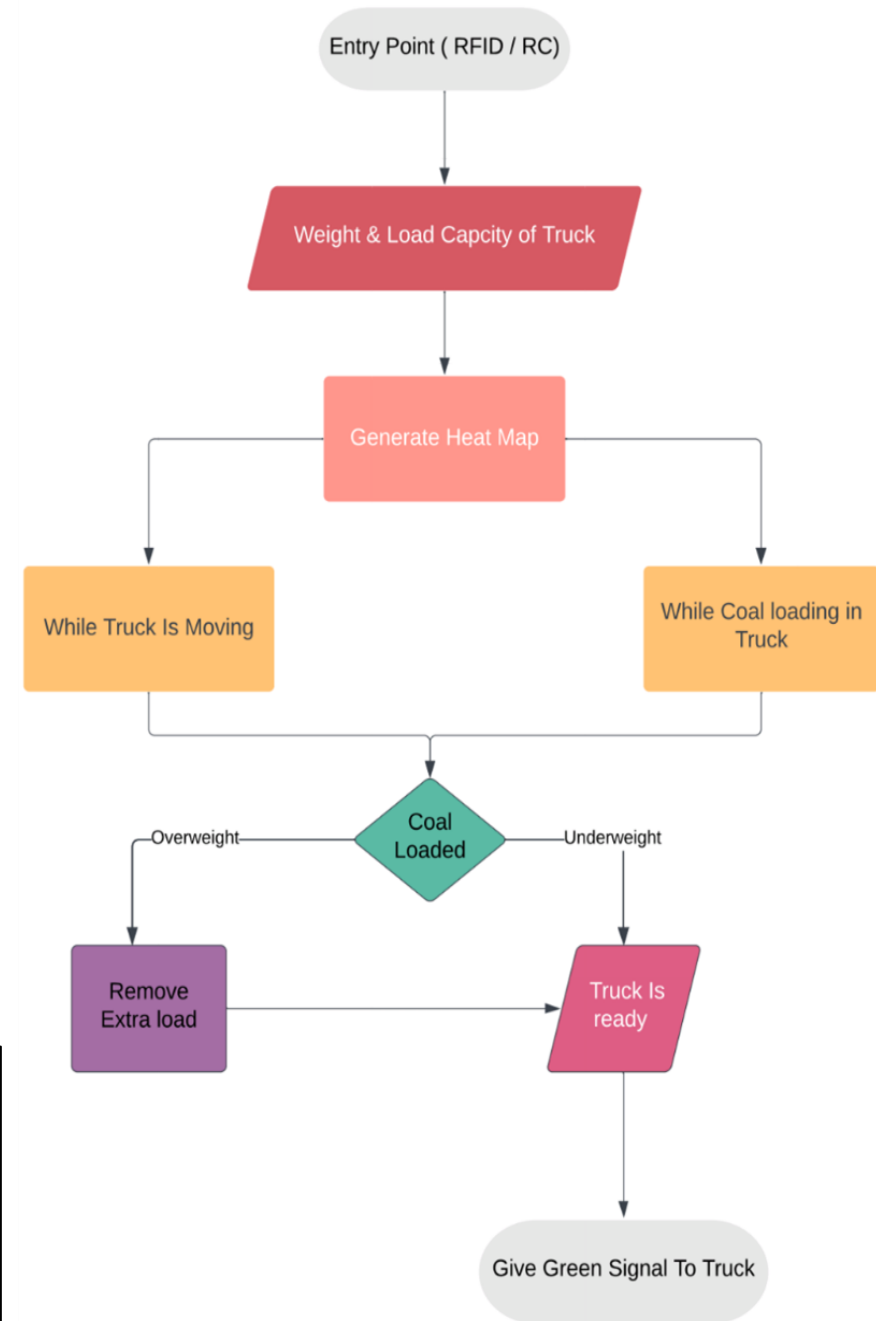
# Idea/Approach Details

## Describe your Solution here:

- As the truck enters the mine its details would be fetched from RFID/RC.
- As soon as the truck starts moving in mine its heat mapping would be done from IR which are already installed in mines.
- The formula used: -  
$$\text{Mass} = \text{heat capacity} / \text{specific heat capacity}$$
- Total peak value would be taken from thermal graph and at last we would be getting that whether the truck is overloaded or not.

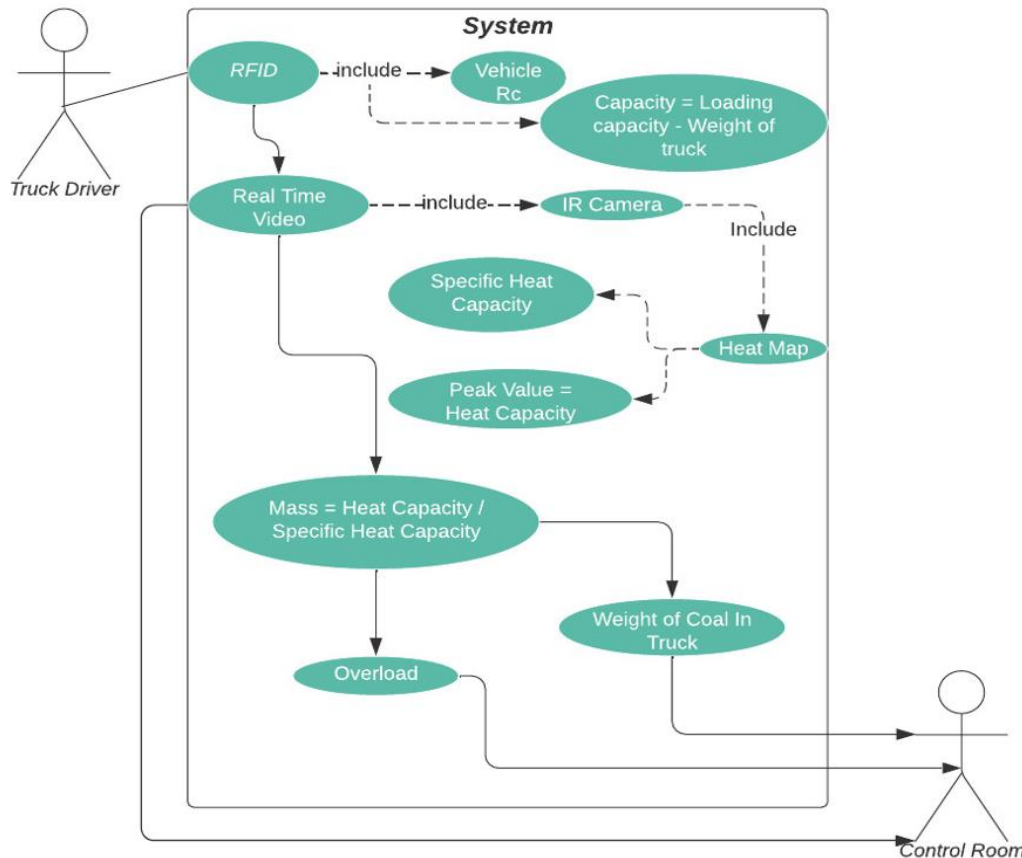
## Describe your Technology stack here:

- Python, SQL, IOT.
- Open CV, YOLO.
- Real time video processing, Thermal image processing.



# Idea/Approach Details

Describe your Use Cases here



Describe your Dependencies / Show stopper here

- Dependencies :-
- IR Thermal Camera.
- RFID/RC.
- Internet Connection.
- Show Stopper :-
- Saving life of people.
- Evergreen system.
- Cost effective.
- Natural resources saved.
- Accuracy of coal loaded.
- Reduce chances of human error.

# Team Member Details

**Team Leader Name: Saumya Arora**

Branch: B.tech

Stream: Artificial Intelligence

Year: III

**Team Member 1 Name: Ankush Patel**

Branch: B.tech

Stream: Artificial Intelligence

Year: III

**Team Member 2 Name: Anupam Mishra**

Branch: B.tech

Stream: Machine Learning

Year: III

**Team Member 3 Name: Komal**

Branch: B.tech

Stream: Data Science

Year: II

**Team Member 4 Name: Chirag Gupta**

Branch: B.tech

Stream: CSE (AI/ML)

Year: I

**Team Member 5 Name: Harsh Bhansali**

Branch: B.tech

Stream: CSE(AI/ML)

Year: I

**Team Mentor 1 Name: Prashant Thanvi**

Category (Academic): Associate Professor

Expertise: AI/ML

Domain Experience (in years): 5+ years

**Team Mentor 2 Name: Chetan Parihar**

Category (Industry): Big Data Professional

Expertise: Cloud and ML Development

Domain Experience (in years): 2+ years