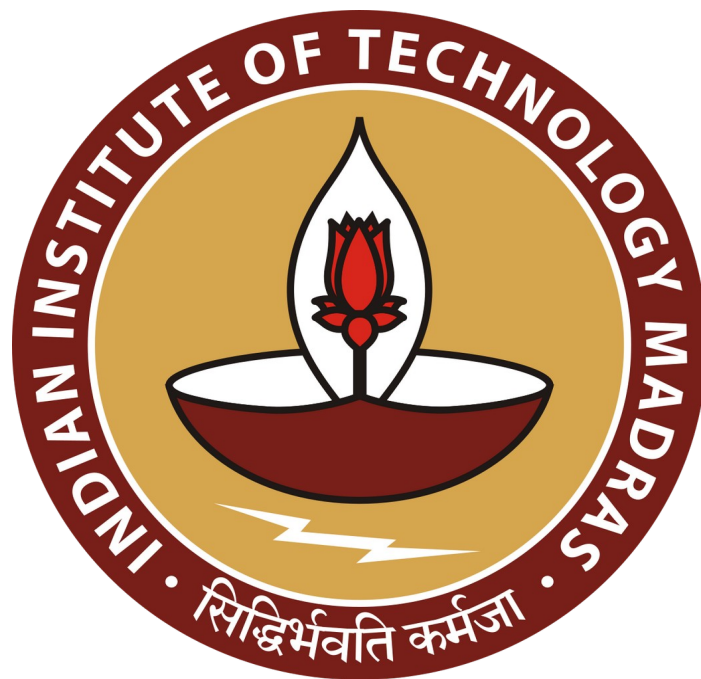# INDIAN INSTITUTE OF TECHNOLOGY, MADRAS

BUSINESS DATA MANAGEMENT
CAPSTONE PROJECT PROPOSAL

Analysis of Food Management System in Railway Running Room

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Executive Summary:

One of the most important means of transport in India is Railways. Indian Railways contribute a lot to the Nation's economy.For the smooth functioning of Railways, Some big Railway Stations have Running Rooms beside, which are the rest areas for the crew of Railway. Crew includes ALP(Assistant Loco Pilot),LP(Loco Pilot),Goods Guard etc.

Running Rooms require high level attention in order to ensure the crew rest in proper and convenient way.All the required and necessary facilities should be made available for the well being of Railway Staff.A Running Room is associated with crew Lobby where all the information regarding Trains running is provided to the crew.A member of crew is forbidden to use Running Room in Home Station. There are hundred's of Running Rooms in India,which will be working on tender basis to serve the Railway Crew.South Central Railway has 6 divisions and under each of them there are some finite Running Rooms.There will be inspection in Running Room by CLI(Chief Loco Inspector),DRM(Divisional Railway Manager),ADRM(Additional Divisional Railway Manager),GM(General Manager),AGM(Additional General Manager) to ensure the best performance of Running Rooms.

After the report of Inspection,Supervisors along with Contractors make sure of rectifying the mistakes if any.There will be Foreman for every Running Room with 1-2 Supervisors, Kitchen Staff ,around 10 call boys etc.

The aim of the Project is to get an idea of how the Food Management System is overseeing in Running Rooms . As it's most important for the safety of Railway Crew , initial target is to address various problems and concerns faced upon maintenance of Running Room.

Organization Background:

This Analysis is done using the data provided by Supervisor of Railway Running Room which is located in Kazipet ,Warangal Telangana.It is established in the year 2012. It is required that Crew work in both Inward and Outward Journey to avoid Idle Movement of Crew as Passenger.

There will be a gap of 8 hours between their work hours.And these 8 hours are completely meant for rest according to the Government Rules.

Generally Running Rooms work on Tender Based Manner and recently in December 2022, the tender for Kazipet Running Room has been given to Mega Constructions under Secunderabad division.

Railways take important measures to ensure the safety upon Running Rooms which help Railway Staff to be comfortable in their odd timings. All the information regarding the crew in-time and out-time food taken will be computerized.

Problem Statement(Business Problem):

➢ Reducing wastage of food
  ● Not Only the food prepared is being wasted But Also it is not even being sufficient , mostly depends on the incoming crew count .
  ● The primary objective is to balance the amount of food being cooked and served.
➢ Aiming to stop the crew complaining about the Food Maintenance and reduce cooking of unseasoned food .
  ● Crew may not satisfy with the services provided by the Running Room. So there is a chance of escalation in complaints .
➢ A non technical problem is the Irregular Attendance of Kitchen Staff.

Background of Problem:

Even though this is the non profitable management system, the main problem in Running Room with regard to food management is wastage of food.When a group of 150-200 Railway Crew are to be supplied food, there is a chance of dissatisfaction with respect to taste,way of serving etc. Approximately 5 different states Crew usually have rest in Kazipet Running Room. But the number of drivers coming to Running Room varies day by day.This is the main reason for the wastage of food.Even after regular inspection by CFI,AGM and GM the problem still persists.

When it comes to menu Idli,Pongal are the ones which are mostly wasted and Dosa,Puri are the menu which are not even sufficient at Regular Intervals.This is because of lack of sufficient information on amount of crew coming to Running Room on a day.

As there are crew from different states , Complaints are mostly regarding the flavour of food.And the main reason for this , If Running Rooms were in control of government then Kitchen staff would be appointed by Govt , But now As they are privatized the Kitchen staff is being appointed by the Contractor.In order to reduce the workers, less number are hired eventually the progress of food is being declined.

Problem Solving Approach:

Method and Justification:

- ➢ In order to get the optimal results, best methodologies are chosen and used.
- ➢ Considering each and every minor factor is essential in order to get good idea on problem.
- ➢ Converting unstructured data to structured data is an important task.
- ➢ Cleaning data(Removing Missing Values,Scaling the Values,Removing Outliers) is the foremost task.
- ➢ Pareto analysis can be done to identify the prioritized menu ,such that it can be used more.
- ➢ We have ML algorithms (Linear Regression,Logistic Regression)in Python which can be chosen in order to predict the amount of food or menu items to be cooked.

Data Used:

The data which is provided to me is in the format of csv. I uploaded to google spreadsheets in order to make the analysis easy. As different days have different menu the google sheet contains data which is of period 2 months .One data sheet includes the information about the amount of groceries that are being purchased and another include information regarding the food serving (tokens) information.
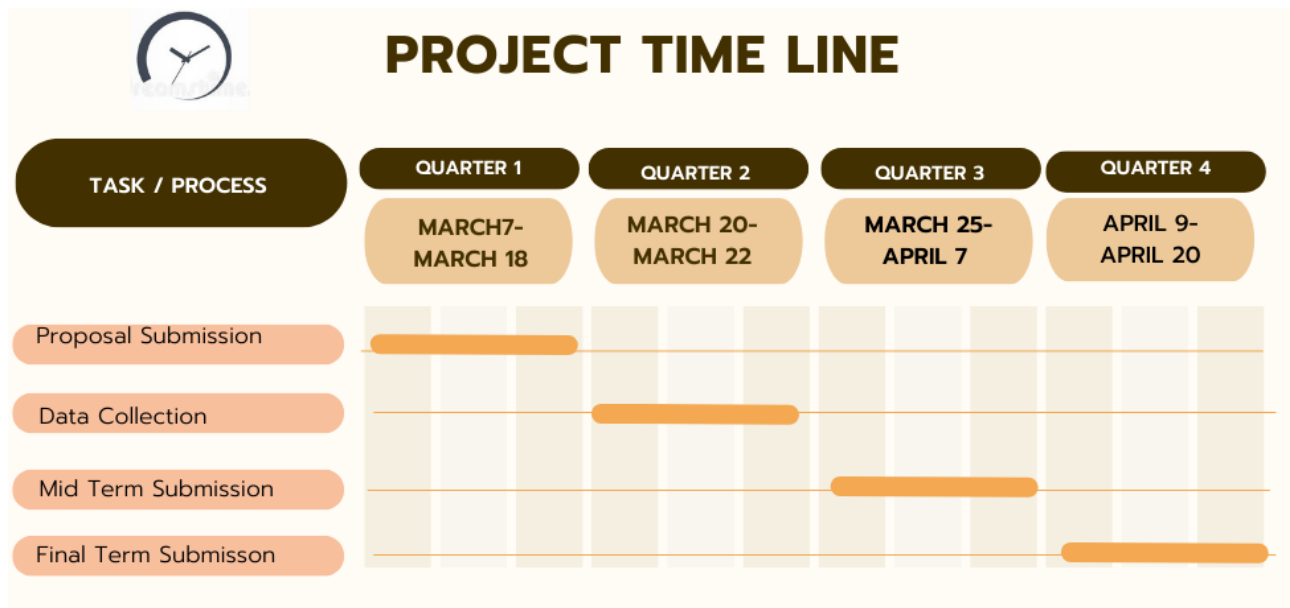
The data also contains the sign-in and sign-off time of the crew which helps us to know if they need any packed food.Generally Packed food is provided during the odd hours to the driver.

Tools used for Analysis:

The first and primary tool that I used is Excel,As data is available in Tabular Format and also it is bit unstructured. Tools like pivot table can be used to convert the Unstructured data to Structured data.And Line tool can be used to observe the change in trend of quantities.

Graphs like Bargraphs, Histograms ,Plots are used for visualizing the cumulative data.VLOOKUP,HLOOKUP formulas can be used for the comparision analysis. Pareto chart analysis helps for counting values upon different variables.Colab also can be used for Pictorial Representations of the Data .Various tools can be used on further requirement.

Expected Timeline:

Expected Outcome:

By the end of this project I will develop some data-driven solutions using some graphical representations ,statistical outcomes which will help in solving problems addressed in problem statement.