M.KUMARASAMY
COLLEGE OF ENGINEERING
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FORECASTING AND SCHEDULING OF RAILWAY RAKES

A MINOR PROJECT - III REPORT

Submitted by

AARTHY A	**927621BEC002**
ABINAYASRI N	**927621BEC004**
ELAKKIYAA B	**927621BEC051**
HARINI S	**927621BEC061**

BACHELOR OF ENGINEERING

in

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

M.KUMARASAMY COLLEGE OF ENGINEERING

(Autonomous)

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BONAFIDE CERTIFICATE

Certified that this **18ECP105L - Minor Project III** report "**FORECASTING AND SCHEDULING OF RAILWAY RAKES"** is the bonafide work of "**AARTHY A (927621BEC002), ABINAYA SRI N (927621BEC004), ELAKKIYAA B (927621BEC051), HARINI S (927621BEC061)** who carried out the project work under my supervision in the academic year 2023-2024 - ODD.

SIGNATURE

Dr. A KAVITHA B.E., M.E., Ph.D.,

HEAD OF THE DEPARTMENT,

Professor,

Department of Electronics and Communication Engineering,

M.Kumarasamy College of Engineering,

Thalavapalayam,

Karur-639113.

SIGNATURE

P.SANMUGAVALLI B.E.,M.E.,

SUPERVISOR,

Assistant professor,

Department of Electronics and Communication Engineering,

M.Kumarasamy College of Engineering,

Thalavapalayam,

Karur-639113.

This report has been submitted for the **18ECP105L – Minor Project-III** final review held at M. Kumarasamy College of Engineering, Karur on_____.

PROJECT COORDINATOR

INSTITUTION VISION AND MISSION

Vision

To emerge as a leader among the top institutions in the field of technical education.

Mission

M1: Produce smart technocrats with empirical knowledge who can surmount the global challenges.

M2: Create a diverse, fully -engaged, learner -centric campus environment to provide quality education to the students.

M3: Maintain mutually beneficial partnerships with our alumni, industry and professional associations

DEPARTMENT VISION, MISSION, PEO, PO AND PSO

Vision

To empower the Electronics and Communication Engineering students with emerging technologies, professionalism, innovative research and social responsibility.

Mission

M1: Attain the academic excellence through innovative teaching learning process, research areas & laboratories and Consultancy projects.

M2: Inculcate the students in problem solving and lifelong learning ability.

M3: Provide entrepreneurial skills and leadership qualities.

M4: Render the technical knowledge and skills of faculty members.

Program Educational Objectives

PEO1: **Core Competence:** Graduates will have a successful career in academia or industry associated with Electronics and Communication Engineering

PEO2: **Professionalism:** Graduates will provide feasible solutions for the challenging problems through comprehensive research and innovation in the allied areas of Electronics and Communication Engineering.

PEO3: **Lifelong Learning:** Graduates will contribute to the social needs through lifelong learning, practicing professional ethics and leadership quality

Program Outcomes

PO 1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO 2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO 3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO 4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO 6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO 7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO 9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO 10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO 11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO 12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes

PSO1: Applying knowledge in various areas, like Electronics, Communications, Signal processing, VLSI, Embedded systems etc., in the design and implementation of Engineering application.

PSO2: Able to solve complex problems in Electronics and Communication Engineering with analytical and managerial skills either independently or in team using latest hardware and software tools to fulfil the industrial expectations.

Abstract	**Matching with POs, PSOs**
Indispensable, forecasting , Transportation , Railway demand modelling.	**PO1, PO3, PO5, PO6, PO7, PO8, PO9, PO11, PO12, PSO1, PSO2**

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ABSTRACT

Forecasting represents an indispensable activity in railway transportation planning. Forecasting of demand levels is vital to the railway company as a whole as it provides the basic input for the planning and control of all functional areas including railway transport operations planning, marketing and finance. Demand levels and the timing of their appearance (on a day, week, month or seasonal basis) greatly effects capacity levels, financial needs and general structure of the business. Forecasting employs historical data and uses various forecasting methods to make accurate estimates of future demands. Forecasting approaches can be generally divided into two categories: econometric or causal and time series techniques. In this chapter a comprehensive review of methods belonging to these two broad classes will be made. Special emphasis will be given to the application of these techniques to railway demand modeling.

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CHAPTER 1

INTRODUCTION

As the name suggests, this feature provides the opportunity to the user to explore his trip on his computer. On a Google map showing all major cities, the user clicks on his starting city. Then by providing his interest, and the range of his travelling he will get all the cities, which matches both criteria, on a Google Map centred on his starting city. Now with just only a click he can explore any city for its rating, main attractions and experiences of the past travelers to that city. Along these things, a slide show of the photos of that city searched from Flickr completes the Virtual Trip. This feature offers user a trip on the basis of his travelling needs like his starting station, interests and the number of days he wants to travel. The offered trip is featured in an interactive manner on a Google Map, complete information of which is provided next to the map. It is further enhanced by providing individual city information which includes rating, main attractions of the city, reviews of other travelers who have visited the city earlier and a further link to view that city through its photos which are searched from Flickr and shown in a beautiful manner. The cities which are part of the trip are selected in decreasing order of their rating in the held of travelers interest and then, the whole trip is planned keeping in mind it does not exceeds total number of days. Forums form an important part of the travel facilitation service as they allow users to interact with each other. Forums allow anonymous visitors to submit topics for discussion and communicate with each other using publicly visible messages. It facilitates users to post any query, share their experiences on some tour or city and create a bond of relationship among its users.

1.1 PROJECT DETAILS

There are five modules in this project.

- Admin module
- Travel Module
- Customer module
- Login Registration Module

1.2 MODULE DESCRIPTION

1.2.1 Admin

Administrator is the owner of our website who will maintain entire website and travel users access rules and also monitor the customers activity. Admin is only responsible for adding update and view the tour plans depending or based on monthly or seasonally. After adding plan he can view and get Info about customers who are booked to that tour plans.

1.2.2 Travel

Travel user are travel agencies which are users of website who can add trip and update and view passengers details who are booked for a convenient source and destination. Once they registered on our website the can get username passwords to access their accounts in our sites. Their access rules are maintained by admin of site

1.2.3 Customer

Customers are true first level users who are getting benefits from our site directly. After Registration they will be users of our site by using username password they can login and can search for tour and travels. The Search Condition also make good compatibility for customer to search for travels. If

they satisfy with information regarding tour and travels they can booking tickets to our sites. Tour and travels agencies will contacts shortly.

1.2.4 Login Registration

This Module helps user to add users to our site in registration all details are get down from user and they will be given username password for authentication process.

1.2.5 Feedback

Feedback Modules will helps the admin to know the future enhancements developments. Customers can give their feedbacks often.

1.3 SOFTWARE DESCRIPTION

Operating System	:	Windows
Technology	:	Java and J2EE
Web Technologies	:	Html, JavaScript, CSS
IDE	:	Net beans IDE
Web Server	:	Apache Tomcat
Database	:	MySql5.0
Java Version	:	J2SDK1.5
HTML Designing	:	Dream weaver Tool

CHAPTER 2

LITERATURE SURVEY

2.1 TESTING

2.1.1 Validation Testing

Software validation is achieved through a series of tests that demonstrates conformity with requirements. Thus the proposed system under consideration has been tested by validation and found to be working satisfactorily.

2.1.2 Black Box Testing

This testing method considers a module as a single unit and checks the unit at interface and communication with other modules rather getting into details at statement level. Here the module will be treated as a block box that will take some input and generate output. Output for a given set of input combinations are forwarded to other modules.

2.1.3 Unit testing

Unit testing focuses verification effort on the smallest unit of software i.e. the module. Using the detailed design and the process specifications testing is done to uncover errors within the boundary of the module. All modules must be successful in the unit test.

2.1.4 User acceptance Testing

The system under consideration is tested for user acceptance by constantly keeping in touch with the prospective system users at the time of developing and making changes whenever required. This is done in regard to the following points.

2.2 DATABASE

Database are software systems used to store, retrieve, and run queries on data. A DBMS serves as an interface between an end-user and a database, allowing users to create, read, update, and delete data in the database. A web-based data

management system provides a secure way for end users to manage database tables using a web browser. Security is in place to ensure that users can't see or manage data that they're not authorized to manage. It allows users to create and edit SQL queries and manage databases. Microsoft SQL Server Management Studio has been on the market for a long time. DBAs and database developers can use SSMS to configure, manage, and administer all SQL Server components.

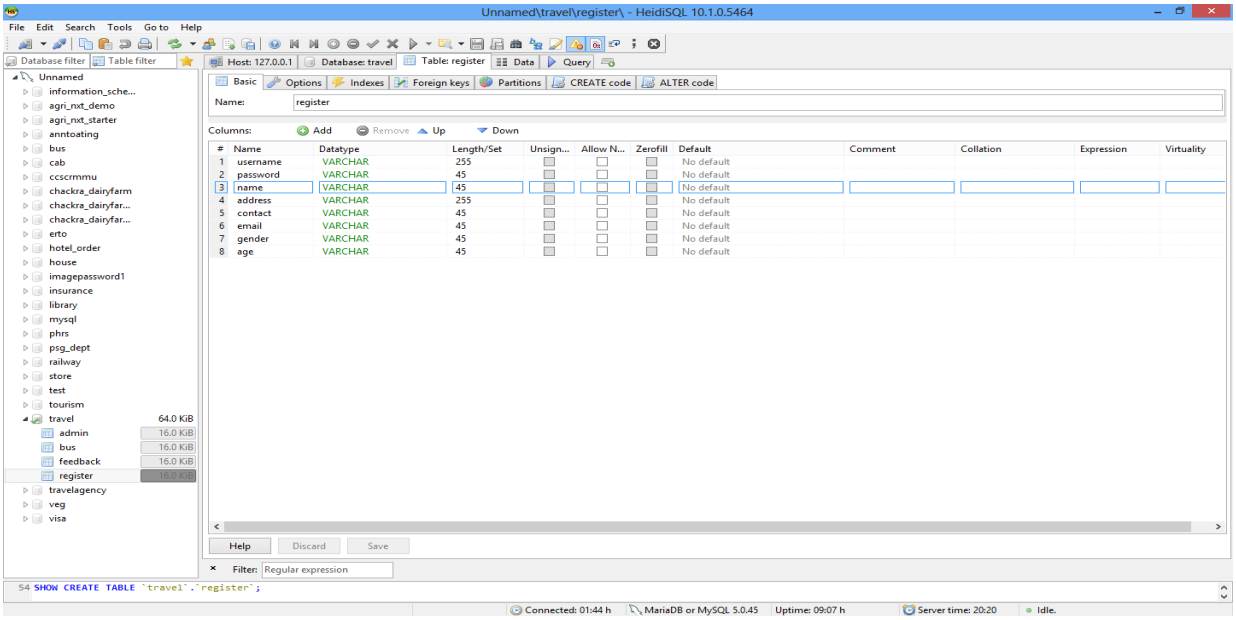

FIGURE 2.1 DATABASE

CHAPTER 3
EXISTING SYSTEM

In the present system a customer has to approach various agencies to find details of places and to book tickets. This often requires a lot of time and effort. A customer may not get the desired information from these offices and often the customer may be misguided. It is tedious for a customer to plan a particular journey and have it executed properly. In general if any user plans for any tour they must consult any traveling agency for make travel confirmation after enough satisfaction. At the same time the user has to do traveling reservations from source to destination, hotel reservations at destination place and other travel reservations from destination to other places, this involves lot of manual work. For all these type of reservations must be done by user by standing lot of time in a queue.

The existing system process like that the tourist can know the information regarding any passenger agency or travel agency through physically likes through brokers or any agency centre. The existing system only displays the information. The Railway Administration reserves seats, berths, compartments, or carriage in accordance with the rules and conditions published in the Coaching Tariff. A passenger seeking reservation of berth or seats should purchase tickets from the Railway Reservation Offices/Authorised Travel Agency only. Thus Railway Reservation System will provide the available Train-list, and Seat-availability, via-details. To make any request to the system that is not possible in the existing system. In the system a customer has to approach various agencies to find details of places and to book tickets. This often requires a lot of time and effort. A customer may not get the desired information from these offices and often the customer may be misguided. It is tedious for a customer to plan a particular journey and have it executed properly.

CHAPTER 4

PROPOSED SYSTEM

The proposed system is a web based application and maintains a centralized repository of all related information. The system allows one to easily access the relevant information and make necessary travel arrangements. Users can decide about places they want to visit and make bookings online for travel and accommodation. With the proposed system, the system provides a provision of taking day wise, weekly and monthly reports. By using these reports, the traveling of train operating companies can analyse their business-track the agent-wise and staff-wise progress reports. This will help in managing healthy and productive financial transactions. The travel agency which gives all the required facilities to their customers when they are ready to plan for any travel. By using this portal the user can also book travel agencies for travelling to which place he want to go, they can reserve their tickets for any travel, they can book hotels and also it provides help to the users.

CHAPTER 5

RESULT AND DISCUSSION

In our project railway system we have all the information saved regarding the train,passengers, tracks, where and how The Train moves, station, schedules, routes andwhat it consists of. We had considered the most important requirements only manymore features and details can be added to our project in order to obtain even moreuser-friendly applications.These applications are already in progress and in future they can be upgraded andmay become part of amazing technology. In our project railway reservation system we have stored all the information about the trains scheduled and the users booking tickets and even status of train and seats. This data base is helpful for the application which facilitate passengers to book the train tickets and check the details of trains and their status from their place itself it avoids inconvenience of going to requirements only and many more features and details can be added to our project inorder to obtain even more user friendly applications.These applications will be progress in future.

CHAPTER 6

CONCLUSION AND FUTURE WORK

Railway reservation system we have stored all the information about the Trains scheduled and the users booking tickets and even status of trains, seats etc. This data base is helpful for the applications which facilitate passengers to book the train tickets and check the details of trains and their status from their place itself it avoids inconviniences of going to railway station for each and every query they get. We had considered the most important requriments only, many more features and details cand be added to our project inorder to obtain even more user friendly applications. These applications are already in progress and in future they can be upgraded and may become part of amazing technology.

The Railway Administration reserves seats, berths, compartments, or carriage in accordance with the rules and conditions published in the Coaching Tariff. A passenger seeking reservation of berth or seats should purchase tickets from the Railway Reservation Offices/Authorised Travel Agency only. Thus Railway Reservation System will provide the available Train-list, and Seat-availability, via-details. To book a ticket passengers can pay through online/offline mode. After successful payment of the ticket fare the System will generate the ticket and PNR no. will be given to the passenger.

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Organising Secretary

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Principal

FORECASTING AND SCHEDULING OF RAILWAY RAKES

Sanmugavalli P[1] ,Aarthy A[2] , Abinayasri N[3] ,Elakkiyaa B[4] ,Harini S [5]

[1,2,3,4,5]Dept. of ECE M.Kumarasamy College of Engineering Thalavapalayam, Karur 639 113

[1]sanmugavallip.ece@mkce.ac.in,[2]aarthy159@gmail.com , [3]abineela10@gmail.com ,
[4]elakkiyaabalan5433@gmail.com ,[5]harinimahi1212@gmail.com

Abstract: Forecasting represents an indispensable activity in railway transportation planning. Forecasting of demand levels is vital to the railway company as a whole as it provides the basic input for the planning and control of all functional areas including railway transport operations planning, marketing and finance. Demand levels and the timing of their appearance (on a day, week, month or seasonal basis) greatly effects capacity levels, financial needs and general structure of the business. Forecasting employs historical data and uses various forecasting methods to make accurate estimates of futuredemands. Forecasting approaches can be generally divided into two categories: econometric or causal and time series techniques. In this chapter a comprehensive review of methods belonging to these two broad classes will be made. Special emphasis will be given to the application of these techniques to railway demand modeling.

Keywords: forecasting, Scheduling,Estimation,Awarness.