

American International University-Bangladesh (AIUB)  
**Department of Computer Science  
Faculty of Science &Technology (FST)  
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**RAILWAY TRACKING AND ARRIVAL TIME PREDICTION**

Software Requirement Engineering

Sec: **A**

Project submitted

By

*SOURAV MANDAL (19-39568-1)*

*IN JAM IFTA KHAR NUR (20-43040-1)*

*SHOPNAMOY SAHA PRONOY (19-41199-2)*

*DIPUNKOR SARKER (18-37976-2)*

**Checked By Industry Personnel**

Name:

Designation:

Company:

Sign:

Date:

1. **PROBLEM DOMAIN**
   1. **Background to the Problem**

It has occurred many times when you have been waiting for someone to arrive at the railway station and you have no accurate information about train timetable and other things. Waiting for someone at a railway station may be an unpleasant experience, especially if you don't know the precise train time or other vital facts. Whether you're waiting for a loved one or a business acquaintance, the unknown of when they'll come may be stressful.

One of the most prevalent causes for not knowing exact train times is a breakdown in communication between the traveler and the person waiting at the station. Travelers frequently fail to notify their companions of any delays or changes in their trip arrangements.

And this can be very time consuming and irritating for every people. Its can be decrease our productivity.

* 1. **Solution to the Problem**

Therefore, we present to you this project on Arrival Time Prediction and Railway Tracking. Utilizing this system client 's can get the data about train timing, and is it on time or not, and other data. The system will keep track of the train's departure time from one station and transmit this information to the system at the other station, which will then display the train's departure time. If the system detects a train delay caused by a signal, it will display the train's timing in the next station and automatically update it.

This system has an admin module that enters train information and its timing. These details are sent to a server on the internet and retrieved by the system at other stations. Another system displays train information to viewers on the platform. The second system will obtain all of the data for all trains, but it will only display the data that pertains to a specific station and will automatically select that data.

For instance, The Kamlapur Station system will display train information if an administrator at Chittagong Station enters information about Kamlapur Station. The Comilla Station system will not be affected. This system works like this: when a train leaves a station late, the administrator enters details about the departure and its time. This information is sent to an internet server in real time, retrieved from another system via the internet server, and the details are displayed on the screen. For viewers to view the information, this second system is installed in various stations. The administration will include information such as the train's departure from the station, anticipated arrival at the destination, and any schedule delays. Subscribing client applications receive real-time train schedule events from this project.

1. **SOLUTION DESCRIPTION**
   1. **System Features**

**Admin Features**

* Can Register in the system.
* Can Log in and Log out.
* Can add train details.
* Can add departure time of all train.
* Can add departed time and departed train information.
* Can update the information like delays , departure time.
* Can show the estimated time from departure to arriving of the train.

**User Features**

* Can Register in the system.
* Can Log in and Log out.
* Can see all train details.
* Can track the train details.
* Can Complain to the train authorities.
* Can shear the train details with others after departed from any station.
* Can see the total travelling time from the system.
* Can see the every location of the train.

* 1. **UML Diagrams (Any 3 types)**
* Draw use-case diagram, activity diagram, class diagram, E-R diagram to describe the solution software you are proposing.

1. **Social Impact**

A project to track trains and predict arrival times can have a number of positive social effects.

To begin, it has the potential to significantly boost the overall effectiveness of railway transportation. Rail operators can better manage their fleets and routes with the help of precise tracking and prediction systems, minimizing delays, enhancing scheduling, and making passengers' journeys more reliable and comfortable.

Second, it may result in increased passenger and staff safety. Arrival time predictions can help passengers plan their journeys and avoid accidents caused by rushing or overcrowding, and real-time tracking can assist operators in quickly identifying and responding to potential safety hazards.

Thirdly, it may benefit the environment by encouraging people to take trains instead of planes or cars, thereby lowering carbon emissions and contributing to the fight against climate change.

Last but not least, the project has the potential to benefit the economy by making rail travel more appealing, generating employment opportunities in the rail industry, and supporting local economies through an increase in business and tourism travel.

A valuable project with a positive social impact, the implementation of a railway tracking and arrival time prediction system has the potential to significantly enhance the efficiency, safety, environmental impact, and economic viability of railway transportation.

1. **Development Plan with Project Schedule**

In your document you should provide proper development plan that presents in every SDLC including **project schedule.**

1. **Marketing Plan**

* **Executive Summary**

This marketing strategy is for a software that predicts arrival times and tracks trains. The product is intended to give ongoing following and appearance time expectations for rail line travelers. This marketing strategy aims to spread the word about the software, raise awareness of the brand, and boost sales.

* **Market Analysis**

The software market for railway tracking and arrival time prediction is expanding rapidly. There is a growing demand for software that can provide real-time information about train schedules, delays, and cancellations in response to the rising number of railway passengers. There are a lot of players in the market, making it very competitive. Nonetheless, the market is as yet open to new players who can offer imaginative arrangements.

* **Target Market**

Train passengers who are looking for real-time information about train schedules, delays, and cancellations are the target market for this software. Railway operators who want to boost customer satisfaction and enhance their services can also benefit from the software. Passengers on both domestic and international flights can make use of the software.

* **Marketing Strategies**

1. **Marketing on social media**

Increase brand awareness and engage with potential customers by creating and maintaining social media accounts on Facebook, Twitter, and LinkedIn. On these platforms, run targeted ads to reach a larger audience.

1. **Influencer Marketing**

Partner with influencers in the travel and transportation industry to promote the software to their followers. Offer them a free trial of the software and incentivize them to promote it to their audience.

1. **Content Marketing**

Create high-quality blog posts, videos, and infographics about the software and its features. Use SEO techniques to optimize the content for search engines and drive traffic to the website.

1. **Email Marketing**

Construct an email rundown of expected clients and send them ordinary pamphlets with refreshes about the product, advancements, and limits.

1. **Referral Marketing**

Give current customers incentives to recommend the software to their friends and family. This could come in the form of special deals, free trials, or other perks.

1. **Partnership Marketing**

Promote the software to customers through collaboration with travel agencies and railway operators. Give them a commission for each new client they bring in who uses the software.

1. **Cost and Profit Analysis**

In your document you should provide proper cost analysis including development and marketing cost. Then you can show profit analysis. Based on your profit analysis investors will be agreed to invest on your idea.

1. **Reference**

* <https://nevonprojects.com/railway-tracking-and-arrival-time-prediction>
* <https://chat.openai.com/chat>