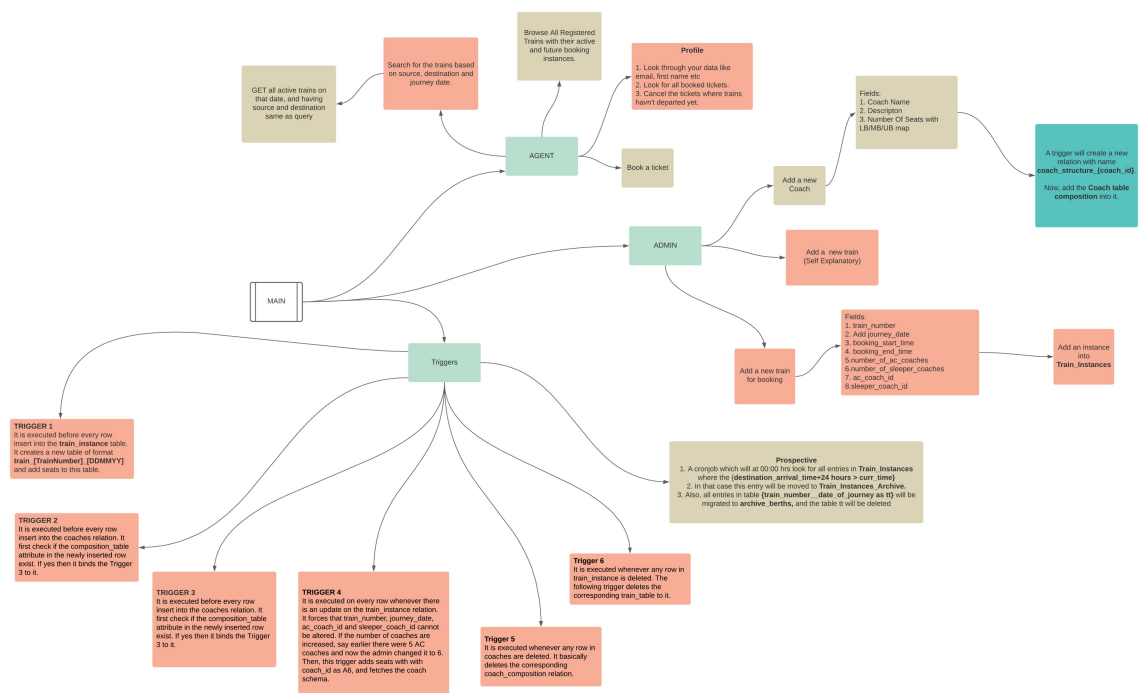


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About	✖ A powerful Railway Ticket Booking Portal built using React, Node, PostgreSQL. Using dynamic SQL techniques, stored procedures, triggers for consistency, and faster query execution.
Link	https://github.com/subhamX/train-ticketing

The latest version of the **Railway Reservation System** is deployed at traintkt.herokuapp.com.



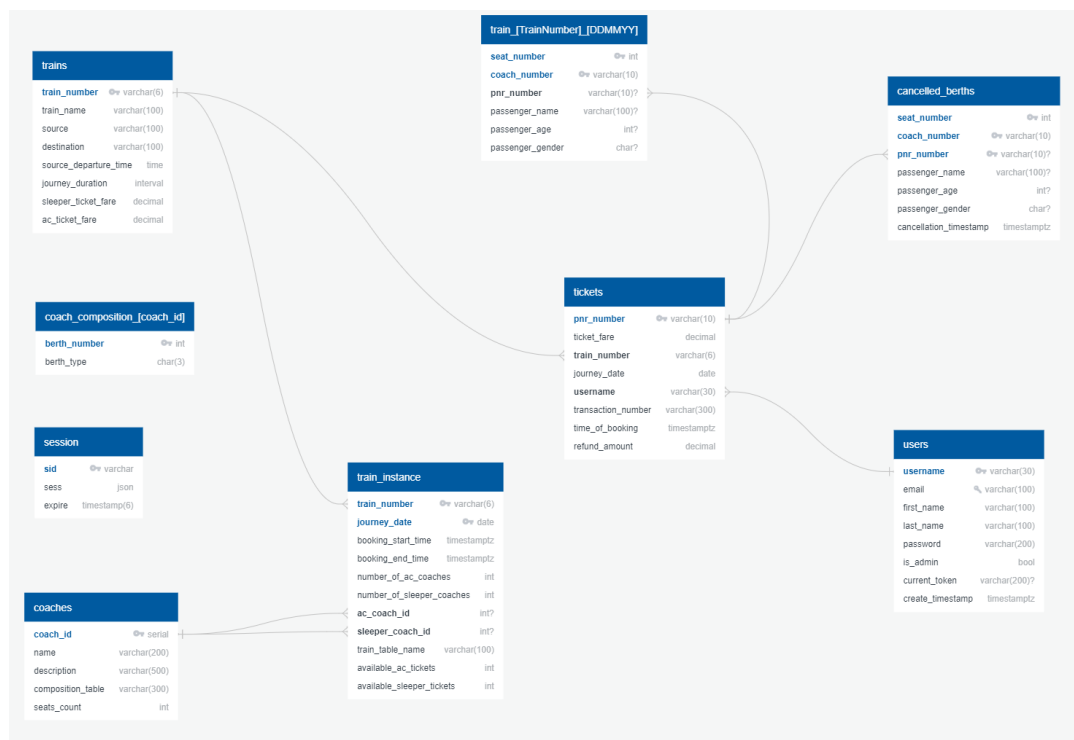
Key Features

1. The project uses dynamic SQL techniques, procedures, triggers, for consistency, and faster query execution.
2. Client can browse through the trains catalogue, their details and all active booking instances of it.
3. The project implements an easy to use trains search view with autosuggestions for train stations. Client can enter source, destination and date of journey and find if there are any trains available for following parameters.
4. Both booking tickets and cancel tickets operation can be performed on multiple passengers at once.
5. Admin can add trains, coaches, and booking instances from the

user interface and need not write any SQL query.

1. Our portal supports multiple coaches, and the Admin can define which coach schema to choose at the time of adding a booking instance.

ER Diagram



Note: All blue and bolded attributes are primary key. All attributes with ? is indicating that the field can be NULL. Relations having [X] are dynamically created where X is some variable.

Technology Stack

1. TypeScript
2. ReactJS (Frontend)
3. NodeJS (Backend)
4. PostgreSQL (Database)

Functionalities Of Our Project

Use cases have been divided based on the end user i.e. Admin and Booking Agents.

Functionalities for Admin

1. Separate Authentication for Admin, and a dedicated admin dashboard.
2. Admin can add new **Trains**, **Coaches** with different seating schemas into the database for the dashboard.

3. Add and update **Reservation status** for trains.
4. Admin can perform the above operations without writing any database query by using our **simple and convenient User Interface**.

Project Walkthrough

The screenshot shows the 'Trains' page of the RAILWAYS application. The header includes the RAILWAYS logo and navigation links: Trains, Book Tickets, Profile, and Logout. The main content area displays train details for 02057 - UHL JANSTB SPL, including the route from New Delhi Railway Station (NDLS) to Rupnagar (RPAR), journey duration (20 hours, 19 minutes), and ticket fares (Sleeper: 550, AC: 1500). Below this, there are three columns of booking information for different classes (1, 2, 3), each showing available counts, journey dates, booking start/end times, and status (EXPIRED, Book Now, INACTIVE).

Journey Duration:	Sleeper Ticket Fare:	AC Ticket Fare
20 hours, 19 minutes	550	1500

Source	Departure Time
New Delhi Railway Station (NDLS)	14:35:00

Class	Available Sleeper Tickets Count	Available AC Tickets Count	Journey Date	Booking Start Time	Booking End Time	Status
1	72	90	11/18/2020	11/15/2020, 12:00:00 AM	11/17/2020, 9:00:00 PM	EXPIRED
2	72	84	12/31/2021	11/21/2020, 12:00:00 AM	12/30/2021, 9:00:00 PM	Book Now
3	72	90	12/31/2022	12/30/2021, 9:00:00 PM	12/30/2022, 9:00:00 PM	INACTIVE

Trains Search Route can help users quickly find the available trains based on starting location, ending location, and the journey date. To ease searching for a specific station, **we autocomplete the source and destination fields based on the keywords** entered by users with the possible stations.

The screenshot shows the 'Search Trains' page of the RAILWAYS application. The header includes the RAILWAYS logo and navigation links: Trains, Book Tickets, Profile, and Logout. The main content area features a search form with 'From' and 'To' fields. The 'From' field is populated with 'Rupnagar (RPAR)'. The 'To' field is empty, and a dropdown menu shows suggestions: 'Delhi Junction (DLI)', 'Hazrat Nizamuddin Delhi (NZM)', and 'New Delhi Railway Station (NDLS)'. A 'Search' button is located below the dropdown.


Search Trains

From: Rupnagar (RPAR)

To:

Delhi Junction (DLI)
Hazrat Nizamuddin Delhi (NZM)
New Delhi Railway Station (NDLS)

Search

RAILWAYS

TrainsBook TicketsProfileLogout

Train Results

* Source:

NDLS

* Destination:

RPAR

* Journey Date:

2021-12-31

Search For Trains

02057 - UHL JANSTB SPL

SLAC

New Delhi Railway Station (NDLS)

...

Rupnagar (RPAR)

Journey Duration:	Available Sleeper Tickets Count:	Available AC Tickets Count:
20 hours, 19 minutes	72	84
Source Departure Time:	Journey Date:	Booking Start Time:
14:35:00	12/31/2021	11/21/2020, 12:00:00 AM
Booking End Time:	Sleeper Ticket Fare:	AC Ticket Fare
12/30/2021, 9:00:00 PM	550	1500

Status

Active

Book Now

Tickets Booking View

02057 - UHL JANSTB SPL

SLAC

New Delhi Railway Station (NDLS)

...

Rupnagar (RPAR)

Journey Duration:	Available Sleeper Tickets Count:	Available AC Tickets Count:
20 hours, 19 minutes	72	80
Source Departure Time:	Journey Date:	Booking Start Time:
14:35:00	12/31/2021	11/21/2020, 12:00:00 AM
Booking End Time:	Sleeper Ticket Fare:	AC Ticket Fare
12/30/2021, 9:00:00 PM	550	1500

Status

Active

* Coach Type

AC

Sleeper

* Name

Alpha

* Age

10

* Gender

male

* Name

Bravo

* Age

12

* Gender

female


+ Add a passenger

Proceed to payment

User Profile Dashboard showing all past tickets

My Tickets

Tap on any card to see the passenger details

 PNR Number: 19JV63BBZ1

Train Number: 02057

Train Name: UHL JANSTB SPL

Destination: Rupnagar (RPAR)

Journey Date: 12/31/2021

Source Departure Time: 14:35:00

Transaction Number: JGTBZLE4JGTBZLE4

Time of Booking: 12/20/2020, 1:40:38 AM

Source: New Delhi Railway Station (NDLS)

Ticket Fare: 3000


Journey Duration: 20 hours, 19 minutes

Refund Amount: 0.0

Cancel Tickets View: ☐

Confirmed Seats

Name	Age	Gender	Seat No.	Seat Type	Coach No.
Alpha	10	M	15	UB	A1
Bravo	12	F	16	UB	A1

 PNR Number: Y7G8S4IIFU

Train Number: 02057


Train Name: UHL JANSTB SPL

Source: New Delhi Railway Station (NDLS)

Users can cancel the confirmed tickets before the train departure. This operation releases the seat for other passengers for booking while the train’s booking status is “Active”. The refund of the cancellation of tickets will be resolved every day during maintenance hours, this regular update reduces the storage overhead, by releasing the details of refunds.

My Tickets

Tap on any card to see the

 PNR Number: 19JV63BBZ1

Train Number: 02057

Train Name: UHL JANSTB SPL

Destination: Rupnagar (RPAR)

Journey Date: 12/31/2021

Source Departure Time: 14:35:00

Transaction Number: JGTBZLE4JGTBZLE4

Time of Booking: 12/20/2020, 1:40:38 AM

Source: New Delhi Railway Station (NDLS)

Ticket Fare: 3000

Journey Duration: 20 hours, 19 minutes

Refund Amount: 0.0

Cancel Tickets View: ☒

Confirmed Seats

<input type="checkbox"/>	Name	Age	Gender	Seat No.	Seat Type	Coach No.
<input checked="" type="checkbox"/>	Alpha	10	M	15	UB	A1
<input type="checkbox"/>	Bravo	12	F	16	UB	A1

Cancel Tickets

Are you sure you want to delete the selected tickets? This action is irreversible!

Cancel

OK

My Tickets

✓ Ticket Cancellation Success

1 New refund amount is 1350.0

Tap on any card to see the passenger details



PNR Number: 19JV63BBZ1

Train Number: 02057

Train Name: UHL JANSTB SPL

Destination: Rupnagar (RPAR)

Journey Date: 12/31/2021

Source Departure Time: 14:35:00

Transaction Number: JGTBZLE4JGTBZLE4

Time of Booking: 12/20/2020, 1:40:38 AM

Source: New Delhi Railway Station (NDLS)

Ticket Fare: 3000

Journey Duration: 20 hours, 19 minutes

Refund Amount: 1350.0

Cancel Tickets View: ☒

Confirmed Seats

<input type="checkbox"/>	Name	Age	Gender	Seat No.	Seat Type	Coach No.
<input type="checkbox"/>	Bravo	12	F	16	UB	A1

Cancel Tickets

Cancelled Seats

API Endpoints Overview

POST user/profile → Gives back information of the user; Only the authenticated user can see his data

GET trains/list → shows a list of all available trains; Public View

GET trains/info/:id → shows train information, and all bookings available; Public View

GET /trains/current/active → Shows all trains which are active booking phase; Public View

GET /cities/all → Returns a list of all cities which are either source or destination; Public View.

POST tickets/book → Allows user to book a ticket; Must be authenticated

POST tickets/cancel → Route to cancel berths from tickets; Must be authenticated; Can cancel only his/her ticket

GET tickets/info/:pnr → Gives back passenger list, and other info; Must be authenticated

GET tickets/all/ → Gives back tickets for a user; Must be authenticated

GET /coaches/list → See all coaches; Public View;

GET /coaches/:id → Coach Information; Public View

POST admin/addbookinginstance → Add a train for booking; Must be an admin

POST admin/trains/add → Add a new train; Must be an admin

POST admin/coaches/add → Add a coach; Must be an admin;

GET chart/:train_number/:date → See the reservation chart; Public View

