1. Introduction

IRCTC (Indian Railway Catering and Tourist Corporation) is a website that primarily deals with online ticketing and catering services for the Indian Railways. It is used by 52 million users (about twice the population of Texas) daily.

The areas we want to redesign are:

a. *User Interface and User Experience*: The user interface and user experience of the IRCTC website could be redesigned to make it more intuitive and user-friendly, especially for users who are not tech-savvy. The site could benefit from a more modern and responsive design, clearer navigation, and streamlined ticket booking processes.

b. *Mobile Responsiveness*: With the increasing number of users accessing the site on mobile devices, the website should be designed to be more mobile-friendly, including features such as touch-friendly controls and an optimized mobile layout.

c. *Speed and Performance*: The website could benefit from improvements in speed and performance, particularly during peak hours when the site experiences heavy traffic.

d. *Personalization*: The site could also benefit from personalized user experiences, such as customized recommendations based on user preferences, personalized travel plans, and suggestions for nearby tourist attractions.

Interface Name: IRCTC (Indian Railway Catering and Tourist Corporation)

Accessibility Methods:

Steps to follow to access the interface

1. Go to irctc.co.in on your web browser and search for trains from your desired locations that you want to visit and the dates you wanted and get find the best train.
2. Download the application from the play store or app store. Then search for trains between any two locations with filters applied.

Problem Space, User Space and Bias:

- The train reservation system is owned by IRCTC a government organization and no other competition is available in this space
- There are a lot of reviews which are given by government supports organizations for which causes a lot of bias in reviews which we had filtered

- All the Indian population is our user space and user types are people whose age ranges from 18 to 70 (including senior people)

2. Need Finding

- Tasks to be done for need finding are:
  - a. Read online reviews of the IRCTC website from trust pilot, mouth shut, play store, reddit and do some analysis.
  - b. Writing down observation of using the website and mobile applications
  - c. Write down functional and non-functional requirements

- **Q&A (Survey)**
  - o How often do you use IRCTC per month?
  - o How easy is accessing IRCTC website?
  - o Are you easily able to search for trains that you need?
  - o Did you ever face issues to navigation through different tabs on site?
  - o Did you ever miss booking on time while tatkal booking because of incomplete captcha loading?

- **Online Reviews**
  - o Play Store:
    - A review from user defining that it is not useful for **visually impaired** and **color blind**

      yatin panchal
      ★☆☆☆☆ February 5, 2023
      Using this application is waste of time for visually impaired. It is an inaccessible application which does not give support for screen reader softwares and applications. I do not understand who is the half knowledgeable developer! Day by day this application is getting bad and bad. Unexpected from Indian railway. I will never recommend this application anyone. Also it is showing unwanted advertisements. It's really shame! There is no option to give zero star, therefore I have given 1.
      3 people found this review helpful
      Did you find this helpful?   Yes   No

    - Unclear login system on mobile app. No proper handling of sessions.
    - Too many advertisements and unnecessary captcha while tatkal

      NIKHIL ZAMBRE
      ★☆☆☆☆ February 4, 2023
      I have been using this app very long time and when I used to book tickets while making payment it's shows too many advertisement. Atleast we expect that while making payment processing there should be no advertisement. In tatkal tickets booking we have minimum time to book tickets and our lots of time is wasted to avoid the ad and search where to input captcha and other things. Also while booking tatkal ticket it's automatically logout anytime at payment also.
      4 people found this review helpful
      Did you find this helpful?   Yes   No

- On click of filters the search is not filtering instead firing search queries

Tejas Chaudhari

★☆☆☆☆ January 6, 2023

Gets hang while searching train. Also have to refresh each quota of each train again and again to see available seats. Can't it just show all available and waiting data to select from. Instead we have to click each quota again and again to see availability. Also while doing so, 5 of 10 search gets hang, and keeps showing popup of 'availability search-please wait'. Tried with different handset but still same. Also filters are also useless, refresh button show seats available but filter does not.

27 people found this review helpful

- No immediate notification and lot of adds space

Vivek Verma

★☆☆☆☆ February 7, 2023

Pathetic app. Don't know why they don't allow to see booked ticket during tatkal window. I booked a tatkal ticket, money got debited from account, then it waited for quited a few minutes and after that it displayed some error on page. I neither received an SMS nor an email regarding the booked ticket. What u think how a user will know if ticket had been booked and it's some server communication error on irctc side?? Now let me know how will be get refund for this error of irctc?

o Reviews from trust pilot, mouth shut, Quora, app store iOS

- Issue with a lot of adds popping up

RD Rajendra Dhaundiyal
2 reviews ◎ AU

★☆☆☆☆ Feb 18, 2022

another wrong renovation

Along with income tax site renovation, this is second worst renovation done by Indian government to make their ok kind of website to worst. The user interface has improved but the functionality of site has detoriated. The popups can come from anywhere without any reason and i think ,the company who has developed the website has used entry level professionals with very little experience in developing the site.

Date of experience: February 18, 2022

👍 Useful 1   ⤳ Share   ⚑

- Signup and sign in and password reset are tedious

Worst App and website seen in last 8-10 years

★☆☆☆☆ 6 days ago   👁 50+ Views

9ramesht
India

1 Review

IRCTC website and App both are worst.

So many Advertisement on a single screen.

could not process - error very frequently.

Sign up, sign in and password reset is so tedious.

It is easily understood that website and app is made in supervision of complacent, lazy, arrogant and ignorant Government employees.

- The website too funky with a lot of styles, colors, and huge fonts

- No proper feedback regarding refund of tickets and frequent logging off / improper session management.

- **Observation**: Issues faced on the interface on examination
  - Difficulty in choosing the seat because of no seat layout display
  - No option of booking saved on payment failure for a 10 min interval
  - Too many adds making the user interface clumsy and distracted

- Double nav bars are confusing for the end user
- The focus of booking tickets is lost
- No proper zoom in and zoom out features
- PNR, charts, refund status and rebook favorites options on clicked taking to new pages which might distract the user focus on single window
- Alignment of widgets on the screen are bad
- Improper placement of icons
- On change of filters search must be clicked again for filtering
- A lot of unnecessary preferences like from and to stations multi select feature is unnecessary
- Some error message not understandable by end user like:
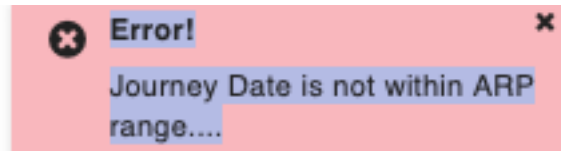
- The chat bot Disha looks like a minified version of the website, and it is supposed to be text and option-based booking
- Some of the links to other sites are not working
- No implementation of single sign on to all the sites linked to IRCTC.

- **Requirements Specification**
  - *Functional*
    - Refund tracking for cancelled tickets is missing feature
    - Single sign on and proper session management
    - Adding In app notifications as an addition notification services with phone number and email
    - Giving an option to add a calendar event after successful booking creation
    - Adding amenities like extra leg room, meal availability, power outlet, air conditioning filters.
    - Adding a new payment option of book now and pay later option
    - Adding seat layout while selecting seats gives more flexibility to user while booking tickets
    - Changing the interface to a light weighted version in peak timings (tatlkal times) for faster access of site
  - *Non-Functional*
    - Redesigning workflows between pages to ensure a smooth experience.

- Redesigning the user interface which includes colors (optimizing it for color blind), resizable font sizes, can add dark theme to application, simpler navigation, removal of adds.
- Moving to light weighted design to the client side hence makes the UI load faster.
- Redesigning of better login and registration system.

3. **Heuristic Evaluation**

a. **Discoverability -** Things we checked are navigation, data consistency, search functionality

  i. Good:
  - Basic functionalities are visible like search for trains and filter for trains, login, signup, and ticket history, reset password.
  - Most of the labels are understandable

  ii. Bad:
  - No Visibility of current page status
  - Two navigation bars on top might create confusion

  iii. improvements:
  - Reinstate with one navigation bar
  - Add information on which page we are inside

b. **Simplicity –** Things we checked if the information retrieval easy from the interface

  i. Bad:
  - Cluttered interface
  - For example, the search options all the filter options are cluttered which makes it difficult for inexperienced users to understand the interface
  - The interface has lot of unnecessary options like a separate mini tab for change password which is over complicating the design

  ii. Improvements:
  - Simplify all the user interfaces by changing layout and user interface widgets
  - Some words like use of dd/mm/yyyy instead of date terminology

c. **Affordances** - Things we checked are if buttons are clearly labelled and hinted properly, progressive disclosure of information, check if links underling and such hints are given properly or not.
   i. Good:
      - Most of the buttons are labelled and have uniform colors
      - Some buttons are faded out when they cannot be clicked (good affordance)
      - There is proper progressive disclosure of information
   ii. Bad:
      - For example, some buttons do not give any info on hover whether the info is clickable or not
   iii. Improvements
      - Adding some hints to buttons
d. **Mapping** – Checked layout consistency, logical grouping, predictable outcomes and clear relationships between task and outcome
   i. Good
      - Basic layout of navbar, search group and search filter and booking options are present.
      - Basic mapping of task to outcome is clear. For example, the book now button takes to the booking page and later takes to payment which is a correct mapping of tasks.
   ii. Bad
      - Some options like buses, flights etc. all redirect to new pages hence logical order of having single app is gone.
      - The logical grouping of filter options in train search page is confusing
   iii. Improvements
      - Improve the search filter layout page
      - Make sure all the nav bar options point to as a single application
e. **Perceptibility** – Check if language is clear, adequate contrast about text background and all required information is clearly mentioned.
   i. **Good**
      The terminology used is truly clear.
      The text contrast is good and clearly visible
   ii. Bad
      No support to change the text of website to local languages
f. **Functional Consistency** – consistent terminology, consistency in workflow, consistency in error handling, consistency in design elements, testing search functionality
   i. **Good**

- The data is consistent across pages
- The workflow is consistent across page

    ii. Bad
- The error handling is inconsistent in some page's popups are coming up and in some other pages there is no notification of errors.
- The layout of search bar changed from one page to another making it in consistent

    iii. Improvements
- Making consistent layouts across all the pages and handing errors in graceful way.
- Reducing the clutter in search criteria

g. Flexibility

    i. Good:
1. Website responds to different screen sizes and resolution
2. Two ways to book one via site and other through chat option

    ii. Bad:
1. No customization options to change text size and color themes and display preferences
2. Only one language change is available in the site and does not localize

    iii. Improvements
1. Add more languages and localize based on location of access.
2. Add dark theme and different font sizes accessible.
3. Can add text to speech capability to allow disable users to access the site.
4. Can add voice-based ticket booking

h. Equity:

    i. Good:
1. The website has a refund policy that is applied to every user irrespective of user type.
2. The password policy is across with all the users

    ii. Bad:
1. The website has a lot of random advertisements which are displayed across different users, and this gives a lot of chances to people to be spammed

    iii. Improvements:
1. Remove advertisements or do something alternative

i. Structure and constraints

        i. Good

           1. The basic layout of common components like navigation bar, forms etc.

        ii. Bad:

           1. All the input field formats of the forms are validated only after submission does not while

j. Tolerance and Feedback

        i. The website is tolerant and provides back option to make changes

        ii. The feedback is a little weak as the language used to describe is not user friendly

        iii. Improvements:

           1. The error messages could be made more user friendly

k. Documentation

        i. Bad:

           1. No documentation is present

        ii. Improvements

           1. documentations could be developed

    4. Interface Redesign

For the redesign we used figma software to design a high fidelity prototype.

The interface is redesigned using the interface redesign project included the following changes:

- A complete overhaul of the home page design
- Elimination of ads to declutter the interface and create a lighter visual experience through careful font and color selection.
- Implementation of a single sign-on feature for accessing all site features
- Transition to a single application model for improved functionality
- Redesign of the search and filtering options for trains
- Addition of a seat layout feature for ticket booking
- Introduction of a text-to-speech converter
- Consolidation of two navigation bars into a single bar
- Integration of helpful hints throughout the interface
- Implementation of user-friendly error messages for proper error handling
- Addition of a dark theme option for the site
- Introduction of more local language options with automatic detection based on user location.
- Inclusion of an option to add calendar events after successful booking creation.
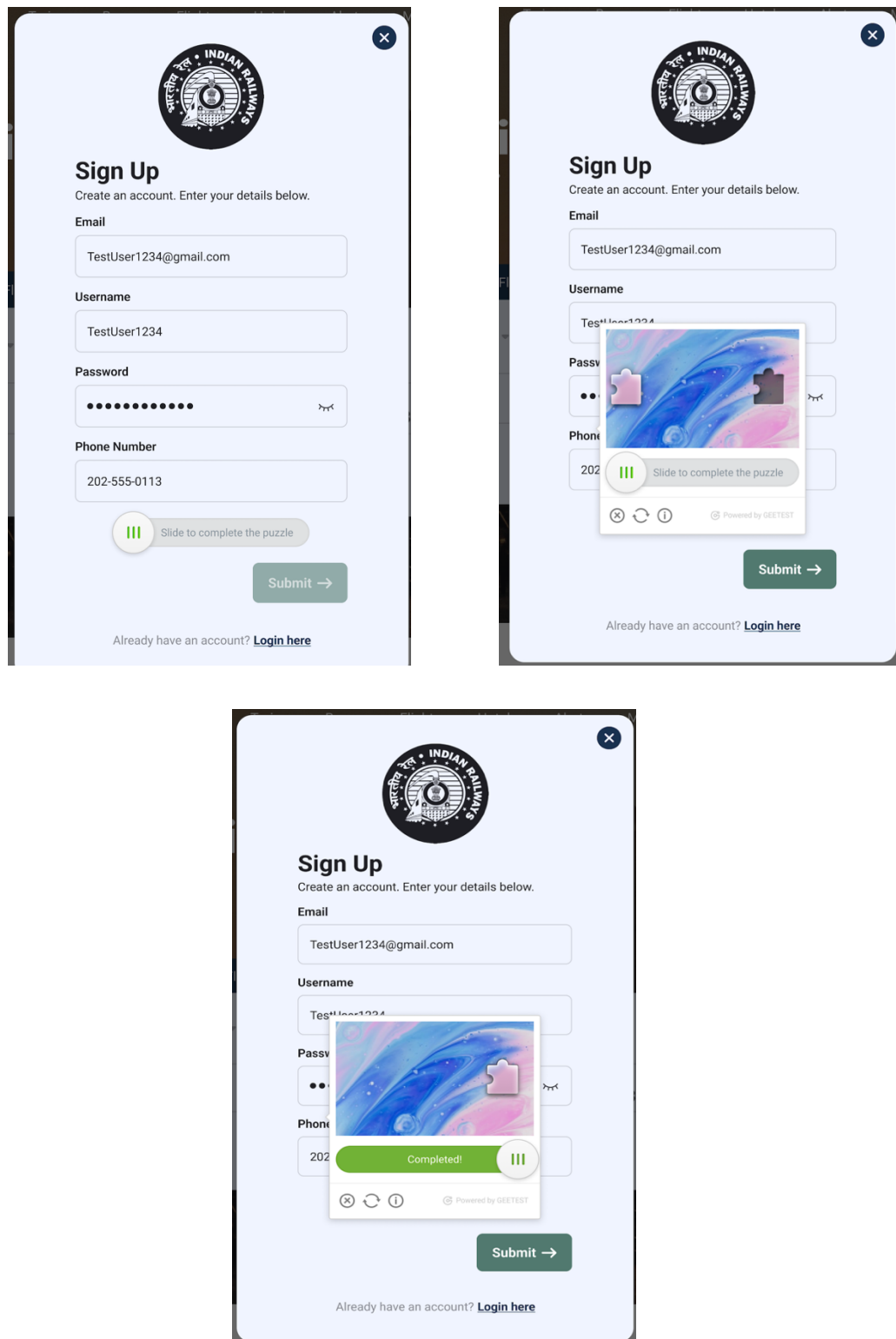- Redesign of the chat bot.

The redesigned wireframe screenshots are mentioned below:

Fig.4.1 SIGNUP / LOGIN PAGE

Indian Railways
Safety • Security • Punctuality

| Trains | Buses | Flights | Hotels | More |

Round Trip ▾   Passengers ▾   Class ▾   Other ▾

FROM
📍 New Delhi   ⇄   TO
📍 H Nizamuddin   DEPART
📅 02/04/2023   RETURN
📅 03/04/2023

Search →

Holiday Packages

Maharajas' Express
Maharajas' Express redefines royalty, luxury, and comfort. Its elegant ambiance, modern amenities, and sylvan furnishings take you on a journey to the bygone era of princely states. It has won the "World's Leading Luxury Train" award for six consecutive years at the World Travel Awards.

International Packages
IRCTC offers the best deals on international holiday packages to destinations such as Thailand, Dubai, Sri Lanka, Hong Kong, China, Macau, Bhutan, Nepal, U.K., Europe, USA, and Australia. Packages include sightseeing, meals, visa, and insurance for a stress-free experience.

Domestic Air Packages
Discover India with IRCTC! Whether you're a spiritual devotee seeking blessings at Tirupati, Shirdi, or Mata Vaishno Devi, or a leisure traveler wanting to relish the beauty of the Blue Mountains, Sand-dunes of Rajasthan, Hamlets of Ladakh, Wonders of Himalayas, Serene lakes, or Picturesque Islands, IRCTC has it all.

Rail Tour Packages
IRCTC's rail tour packages offer confirmed tickets, meals, and sightseeing to destinations like Nilgiri Mountains, Darjeeling, Kullu Manali, Kashmir, and more. Land and holiday packages also available.

Bharat Gaurav Tourist Train
Bharat Gaurav Tourist Train by IRCTC promotes domestic tourism in India. Its AC III-Tier train covers pilgrimage and heritage destinations on 5-20 day trips, showcasing the country's rich cultural heritage.

Didn't find what you're looking for? Check out other services here.

Flights   Bus   Tourist Train   Hotels   Holiday Packages   Rail Drishti   More

Travel	About	Agents	Site Support
Ticket Cancellation	About Us	Agent Login	Login Help
Tourist	Careers	Certificate Process	Site Map
Group Booking	Awards	Find Agents	Browser Compatibility
Travel Insurance	Achievements	Rules and Regulations	Accessibility
How To's	FAQs	Registration Form	Booking Information
		Service Providers	

Connect With Us!

Fig.4.2 HOME PAGE

IRCTC Exclusive   Trains   Buses   Flights   Hotels   Alerts   More ▾   Sign In   EN ▾

☰

View Options

▼ Filter By

Journey Class
☐ AC First Class
☐ AC 2 Tier
☐ AC 3 Tier
☐ Sleeper

Train Type
☐ Garib Rath
☐ Other
☐ Special

Departure Time
☐ Before 10 AM
☐ 10 AM - 5 PM
☐ 5 PM - 11 PM
☐ After 11 PM

Arrival Time
☐ Before 10 AM
☐ 10 AM - 5 PM
☐ 5 PM - 11 PM
☐ After 11 PM

Price
₹1500   ₹8000

Round Trip ▾   Passengers ▾   Class ▾   Other ▾   Sort By ▾

FROM
📍 New Delhi   ⇄   TO
                                 📍 H Nizamuddin   📅 DEPART
                                                            02/04/2023   📅 RETURN
                                                                                 03/04/2023   Update →

NDLS INDB EXP (12416)   Seat Selection

Occupied ■   Ladies ☐

Available ☐   Selected ■   **Book Ticket**

ASR CSMT EXP (11058)

From	Duration	Runs On
Tu, 04 Apr - Tue, 04 Apr	21:50 - 22:01	M Tu W Th F Sa Su
0 Days	11 Minutes	

Book Ticket →

HIMSAGAR EXP (16318)

From	Duration	Runs On
Tu, 04 Apr - Tue, 04 Apr	14:00 - 14:11	M Tu W Th F Sa Su
0 Days	11 Minutes	

Book Ticket →

‹   1   2   3   4   ›

Travel
Ticket Cancellation
Tourist
Group Booking
Travel Insurance
How To's

About
About Us
Careers
Awards
Achievements
FAQs

Agents
Agent Login
Certificate Process
Find Agents
Rules and Regulations
Registration Form
Service Providers

Site Support
Login Help
Site Map
Browser Compatibility
Accessibility
Booking Information

Connect With Us!
f ▶ 📷 in 🐦

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Fig.4.3 SEARCH PAGE

Payment Details

Credit Card   Debit   Apple Pay

Credit Card

Enter your Credit Card number

Name

Enter the name displayed on card

Expiration Date   **CVV**

00/0000   000

Pay Now →

Order Summary

Your Ticket Details

From	To
New Delhi	H Nizamuddin

Departure	Arrival
Tu, 04 Apr at 21:50	Tu, 04 Apr at 22:01

Seat Number	Journey Class
23	AC 2 Tier

Passenger Details

Name	Age
Test User	36

Email	Phone Number
testuser1234@gmail.com	202-555-0113

Total tickets: 1

Total amount: ₹1500

Thanks for Placing your Order!
An email with your order details has been sent to mobile and email.
See your order details below:

Your Ticket Details

From	To
New Delhi	H Nizamuddin

Departure	Arrival
Tu, 04 Apr at 21:50	Tu, 04 Apr at 22:01

Seat Number	Journey Class
23	AC 2 Tier

Passenger Details

Name	Age
Test User	36

Email	Phone Number
testuser1234@gmail.com	202-555-0113

Order Number: 3278-5604-2981

Total tickets: 1

Total amount: ₹1500

Create a calendar event:

Create Event   Create Event
Apple Calendar   Google Calendar

Fig.4.4 TICKET SUMMARY AND BOOKING DETAILS PAGE

5. Interface Justification

Fig4.1 Login and Signup Page

The major change implemented involves the removal of the terrifying captcha, which was known to cause significant inconvenience to users during peak hours, especially when there was a high demand for railway tickets. The captcha's images took considerable time to load, and users often struggled to understand the instructions, leading to slower logins. Moreover, automated booking bots could easily bypass the captcha using current OCR models, leading to unfair distribution of tickets.To address these issues, we have replaced the captcha with a more user-friendly verification process for both signup and login. Instead of the captcha, we have introduced a simple puzzle that requires users to move a slider to solve it. Additionally, we have removed ads from the login/signup pages to further enhance the user experience. These improvements have been replicated across both the login and sign-up pages.

Fig4.2 Home Page

As part of the website redesign, we focused on improving the landing page or welcome page, which had several design issues. The primary concern was the presence of ads, which we removed to improve the user experience. Additionally, we addressed the issue of consistency, as there were two navigation bars with redundant page links. To resolve this, we implemented a single row navigation bar, which significantly streamlined the page layout. Moreover, we added a local navigation bar that allows users to convert the screen's language to any local language of their choice. We also introduced a text-to-speech button that enables users with disabilities to access the content easily. To enhance uniformity throughout the site, we moved both logos to the left end of the page. Furthermore, we received complaints about the irregular fonts and colors used on the site. Therefore, we standardized the fonts, such as Roboto, and used lighter colors, such as white, grey, and light blue, to improve the site's overall aesthetic appeal.

Fig4.3 Search Page

The search for train pages has undergone significant changes to address several key issues reported by end-users. Firstly, users were confused about the filters and experienced page reloading when changing filters or updating search parameters such as departure, arrival, and dates. To address this, we removed clutter and gave each user interface element sufficient space,

improving the overall user experience. Secondly, we removed redundant information such as from and to stations in the filters and added a new price range filter. Additionally, to filter the page, we implemented a UI/UX approach that avoids reloading the full page. Another significant issue reported by users was the inability to view the selected seat, which we addressed by adding a color-coded seat layout that clearly indicates available seats. We also added some restrictions to seat selection and removed unnecessary ads. Furthermore, we moved the sort-by options to the top of the list view and removed redundant information such as "results below" to provide a cleaner design. In addition to that, we introduced pagination to the list of trains on the search page to improve navigation. These changes have improved the user experience and made searching for trains more efficient.

Fig 4.4 TICKET SUMARY AND BOOKING DETAILS PAGE

The Ticket Summary page is where users can find all the information related to their ticket details. However, the original IRCTC page contained a lot of unnecessary information that was unevenly distributed across the page, causing users to scroll down to view all the information. To fix this issue, we selected valuable information, such as the departure station, arrival station, timings, and seat number, and put them in individual grey boxes to highlight the information. Additionally, we added more payment options, including Apple Pay, for user convenience. The Booking page underwent major improvements as well. The original IRCTC website did not provide proper notification upon successful booking. Therefore, we added new features, including a downloadable calendar event that users can download in both iCal (Apple calendar compatible) and Google calendar event formats for better user experience. We also added both email and phone notification with a ticket itinerary attached. Another major improvement was converting the IRCTC Isha chatbot from a mini IRCTC site to option-based booking, which is a more natural way for end-users to access a chat box. Overall, the website theme was designed using light blue, white, and grey. The text colors were carefully chosen, with black text on a white background for sharper visuals. Roboto was used for the design because the text gets automatically spaced depending on the available space for the text to occupy, and it is highly legible.

6. Evaluation Plan and Execution

We chose to use the qualitative evaluation method to assess our design's effectiveness. To conduct the evaluation, we plan to use a Google form containing tasks that users will need to perform on our prototype. Once the task is completed, we will ask a series of questions that aim to gather feedback about the user's experience with the redesigned user interface. Our questionnaire will use a variety of question types, including a 5-point Likert scale, multiple-choice questions, and open-ended questions. Using a combination of these question types will enable us to gather a broad range of feedback and insights into the user experience.

By using a Google form, we will be able to collect data quickly and easily from many users. Additionally, the form will automatically organize the data we receive, making it easy to analyze and interpret the results. Overall, our qualitative evaluation approach will enable us to gather in-depth feedback from users, allowing us to identify areas for improvement and ensure that our design is as user-friendly as possible.

Task:

The prototype is shared with the user. The user is asked to do the given tasks.
- Open the website, click on login, and enter the login credentials
- Slide the bar to solve the puzzle and then click on sign in
- Click on trains select the from, to station and the dates. Now search for trains.
- Select the train which suits your schedule and use the filters on the left-hand side
- Click on book ticket of the train you are interested, and a seat layout will be visible
- Select the number of seats needed and click the pay button and enter the passenger details
- Verify the order summary and submit your payment details and click on pay now
- Now you will be redirected to the last page where ticket summary is present with a calendar event published.

The Questionnaire we asked in the google form are:
- How would you rate the overall user experience on the new IRCTC website?
- Were you able to easily find the information you were looking for on the website?

- How would you rate the website's loading speed and performance?

- How would you rate the dark mode option we provided?

- Which new change you liked the most and we gave them options to choose in between adding your travel date to the calendar or dark mode?

- Did you find the new website more user-friendly than the old one?

- Did you find the new layout and design of the website appealing?

- Would you recommend the new IRCTC website to others?

- Any feedback on what additional features would you like to see added to the new website?

Below are the responses we recorded

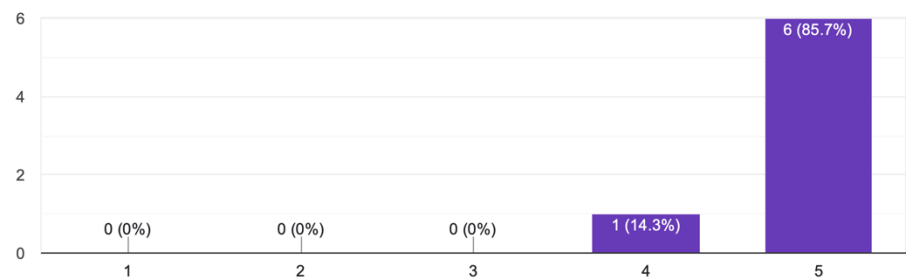**How would you rate the overall user experience on the new IRCTC website?**
7 responses
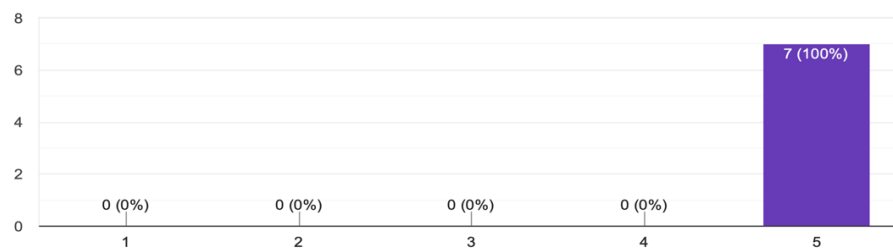
Were you able to easily find the information you were looking for on the website?
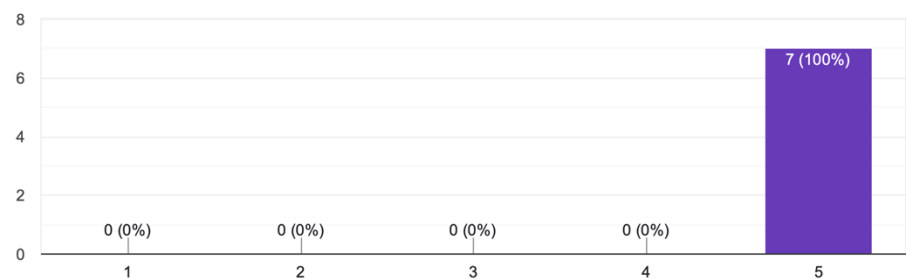7 responses
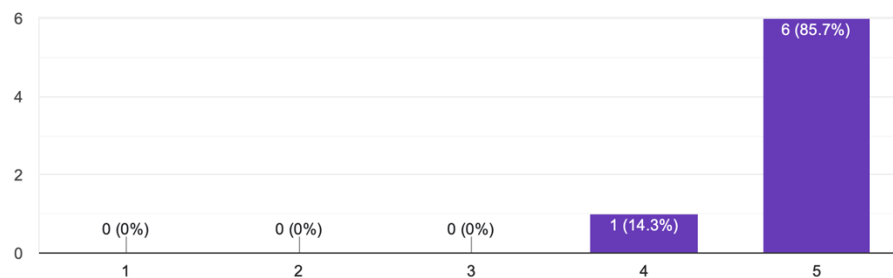
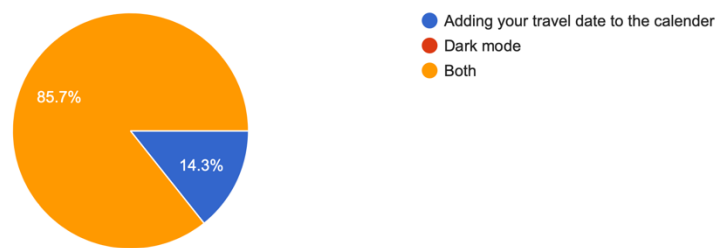How would you rate the website's loading speed and performance?

7 responses

How would you rate the dark mode option we provided?
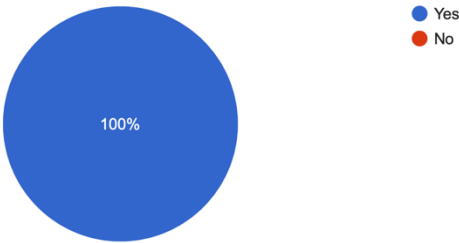
7 responses
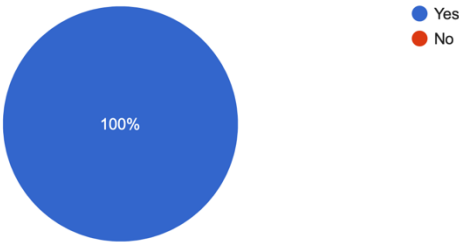

Which new change you liked the most

7 responses

- Adding your travel date to the calender
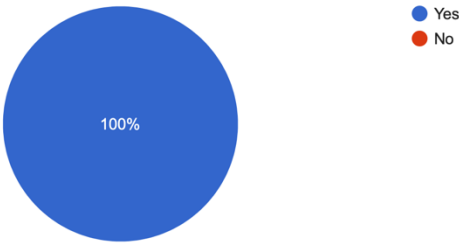- Dark mode
- Both

Did you find the new website more user-friendly than the old one?

7 responses

- Yes
- No

100%

Did you find the new layout and design of the website appealing?

7 responses

- Yes
- No

100%

Would you recommend the new IRCTC website to others?

7 responses

- Yes
- No

100%

Any feedback on what additional features would you like to see added to the new website?

7 responses

Real-time updates on train delays and cancellations.

None... All the features look good

Good website

Everything is promising

I liked the work ✌️😍

No

Great

7. Conclusion

As mentioned earlier, the redesign of the IRCTC website was based on user feedback, which identified several issues with the previous design. To ensure that the redesign addressed these issues and provided a better user experience, a qualitative evaluation approach was used to assess the effectiveness of the new design.

The evaluation approach involved creating a prototype of the redesigned website and developing a set of tasks for users to perform. The tasks were designed to simulate real-world scenarios that users might encounter while using the website. After completing the tasks, users were asked to provide feedback on their experience using a Google form containing a variety of question types.

The questionnaire included questions related to the overall user experience, ease of finding information, website loading speed and performance, dark mode option, and other features that were added to the website. Users were also asked to rate the new design, provide feedback on any additional features they would like to see, and whether they would recommend the new website to others.

Using a combination of Linear scale, multiple-choice, and checkbox questions, the evaluation approach gathered a broad range of feedback and insights into the user experience. By collecting feedback from multiple users, the evaluation approach allowed for a more

comprehensive understanding of the effectiveness of the redesigned website.The data collected from the evaluation was analyzed and used to identify areas for improvement and ensure that the website is as user-friendly as possible.

The feedback received was overwhelmingly positive, with users reporting improved user experience, ease of finding information, and improved loading speed and performance. Users also appreciated the addition of the dark mode option and the ability to add travel dates to the calendar.In conclusion, the qualitative evaluation approach used to assess the effectiveness of the redesigned IRCTC website was an effective way to gather user feedback and identify areas for improvement.

The feedback received from users was valuable in ensuring that the website provided a better user experience, and the approach allowed for a more comprehensive understanding of the effectiveness of the redesign. The IRCTC team can use this feedback to make further improvements to the website and provide a better experience for all users.