

Project Report

SAHYADRI TRAILS: TREKKING EXPERIENCE MADE SEAMLESS



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Abstract

Sahyadri Trails is a Django-based web application designed to enhance the trekking experience in the Sahyadri mountain range, Maharashtra. The platform provides a seamless booking system, allowing users to explore treks, make reservations, and manage their bookings efficiently. Key features such as OTP-verified authentication, secure login, and profile management ensure a safe and personalized user experience. Additionally, the integration of vlogs and a chatbot assistant offers interactive guidance and trek recommendations.

With a user-friendly interface, Sahyadri Trails streamlines the entire trekking journey, from trek exploration to booking confirmation. The Explore page allows users to browse treks, while the Booking Management System ensures easy access to booking details. The Profile Section securely stores user information, and the Admin Panel facilitates efficient management of user data, trek reservations, and promotional offers.

A key feature of the platform is its Dashboard for Analysis, which provides administrators with insights into booking trends, revenue, and user engagement. Additionally, a Discount Management System enables targeted promotional campaigns to enhance customer engagement and retention.

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Introduction

Trekking is a popular adventure activity that allows enthusiasts to explore nature while challenging their endurance. The Sahyadri mountain range in Maharashtra is home to numerous breathtaking trekking destinations, offering a mix of historical forts, lush green trails, and scenic landscapes. However, planning and managing treks can often be cumbersome due to a lack of streamlined booking options, trek information, and organized management systems. Sahyadri Trails aims to address these challenges by providing a digital solution that simplifies trek exploration, booking, and management.

Sahyadri Trails is a Django-based web application designed to enhance the trekking experience by offering an intuitive and secure platform for booking treks. The system provides OTP-verified user authentication, allowing trekkers to register and log in securely. Users can browse various trekking destinations through an interactive Explore page, access detailed trek descriptions, and seamlessly book their preferred treks. The Booking Management System enables users to review their reservations, download booking details, and keep track of their trekking history.

To further enhance user engagement, the platform integrates vlogs and a chatbot assistant, offering informative content and personalized trek recommendations. Additionally, the Profile Section allows users to manage their information, while an Admin Panel ensures efficient handling of user data, trek bookings, and promotional discount offers. One of the most valuable features of Sahyadri Trails is its Dashboard for Analysis, which provides administrators with insights into booking trends, total revenue, and user activity, facilitating data-driven decision-making.

By incorporating a structured workflow and data-backed management system, Sahyadri Trails transforms the way trekkers plan their adventures. Future enhancements such as real-time chat support, AI-driven trek recommendations, and user reviews will further optimize the platform, making it an all-in-one solution for adventure seekers and trek organizers alike.

Project Overview

Sahyadri Trails is a Django-powered web application designed to simplify the planning and booking of treks in the Sahyadri mountain range, Maharashtra. The platform provides a structured and intuitive system where users can explore various trekking routes, securely book treks, and manage their bookings with ease. By integrating secure authentication, an efficient booking system, and data-driven insights, Sahyadri Trails enhances the trekking experience for adventure enthusiasts.

One of the key challenges trekkers face is limited access to reliable trek information and the absence of an organized booking system. To address these issues, the platform offers an Explore Page, where users can browse through trekking destinations, view relevant details, and make informed choices. The Booking Management System ensures a seamless reservation process, allowing users to track their bookings and download necessary details for future reference. Additionally, the Profile Section provides a personalized space where users can manage their details and keep a record of their trekking history.

For administrators, Sahyadri Trails includes an Admin Panel that facilitates user management, trek bookings, and promotional discount offerings. The Dashboard for Analysis provides real-time insights into bookings, revenue generation, and user engagement, helping trek organizers make informed decisions to enhance the platform's efficiency. Furthermore, a basic Chatbot Assistant is integrated to assist users in selecting treks based on their preferences, offering recommendations without AI-driven complexities.

Designed for scalability and continuous improvement, Sahyadri Trails has the potential for future enhancements, such as real-time customer support, user-generated reviews and ratings, and multilingual support. By leveraging technology, the platform ensures a more structured, accessible, and engaging experience for trekkers and organizers alike, making trekking planning hassle-free and more enjoyable.

Technologies Used

1. Backend Framework: Django

Django is a powerful Python-based web framework that helps developers build secure, scalable, and maintainable applications with ease. It follows the MVC (Model-View-Controller) architecture, though Django calls it MVT (Model-View-Template). Django comes with several built-in tools for common web development tasks, such as handling forms, authentication, and routing. It also includes an ORM (Object Relational Mapper), which simplifies interactions with databases, and offers tools for handling security features like SQL injection prevention, cross-site request forgery (CSRF) protection, and session management. Django is known for its "batteries-included" philosophy, meaning it provides many built-in features that minimize the need for third-party packages.

2. Programming Language: Python

Python is the primary programming language used for backend development in this project. It is a high-level language known for its simplicity, readability, and versatility. Python's clean syntax and vast libraries make it an excellent choice for web development, especially in combination with Django. Python's popularity in the development community ensures robust support and continuous improvements. Python is highly efficient for writing server-side code and handling operations like data processing, user authentication, payment handling, and interactions with external APIs. Its wide adoption and large developer community ensure that development time is shortened, and resources like libraries and support are readily available.

3. Database: SQLite

SQLite is a lightweight, serverless relational database engine that is bundled with Python and used for storing application data. Unlike other databases like PostgreSQL or MySQL, SQLite does not require a separate server process, making it easy to use for development and small-scale applications. SQLite stores the entire database in a single file, which makes it efficient for low-traffic applications like DriveEase.

4. Frontend Technologies:

- **HTML5:**

HTML5 is the standard markup language used for creating the structure of web pages. It provides a semantic structure for content, making it easy for developers to organize and display information logically.

- **CSS3**

CSS3 is the language used to style HTML elements. It includes properties

like colors, fonts, margins, padding, and layouts, helping create visually appealing designs.

- **Bootstrap**

Bootstrap is a front-end framework that facilitates the creation of responsive, mobile-first websites. It provides pre-designed components like buttons, forms, navigation bars, and grids, which help to build a clean and responsive user interface quickly.

- **JavaScript**

JavaScript is used for adding interactivity to web pages. It handles client-side operations such as form validation, dynamic content loading, and user interactions like button clicks.

5. Security Measures

- **Django Security Features:**

Django provides built-in security features like Cross-Site Request Forgery (CSRF) protection, Cross-Site Scripting (XSS) prevention, and protection against SQL Injection. These features ensure the integrity and security of the application.

- **Password Hashing:**

Django uses secure hashing algorithms (such as PBKDF2) to store user passwords safely. This means even if the database is compromised, user passwords remain secure and unreadable.

6. Email Integration using SMTP

Email communication in web applications enables user verification, notifications, and transactional messages using SMTP for sending and IMAP/POP3 for receiving. Secure transmission is ensured via TLS/SSL encryption. Services like Gmail, AWS SES, and SendGrid provide APIs for integration. Common uses include OTP verification, password resets, and booking confirmations, enhancing user engagement and security.

7. PythonAnywhere

PythonAnywhere is a cloud-based platform that allows you to develop, run, and host Python applications online. It provides an online code editor, Bash console, scheduled tasks, and web hosting with support for frameworks like Django and Flask. You can deploy Django applications with minimal setup, connect to databases like MySQL or PostgreSQL, and configure a custom domain. It also offers free and paid plans, making it a convenient choice for hosting small to medium-sized Python web applications.

System Architecture

Sahyadri Trails is a Django-based web application designed to facilitate trek bookings in the Sahyadri mountains of Maharashtra. The platform offers a seamless experience for users to explore available treks, book their journeys, and manage their profiles. With a user-friendly interface, the system ensures accessibility across devices, providing an engaging and efficient way for trekking enthusiasts to plan their adventures.

The system follows a three-tier architecture, comprising the presentation layer, application layer, and data layer. The frontend is built using HTML, CSS, and JavaScript, styled with Bootstrap, to create a modern and responsive design. Users interact with the platform through various sections, including a landing page showcasing trek details and vlogs, an explore page, a contact page for inquiries, and a secure booking section requiring authentication.

The application layer is powered by Django, managing core functionalities such as user authentication, booking management, and chatbot integration. The authentication system includes OTP-based user verification, ensuring secure access. Once logged in, users can book treks, view booking details, and download their reservations. The AI-powered chatbot enhances user engagement by answering queries and providing recommendations.

For backend operations, SQLite serves as the primary database, efficiently storing structured data such as user details, trek information, and booking records. The system ensures database optimization through indexing and query performance enhancements, improving response times and overall efficiency.

To enhance communication and security, SMTP-based email notifications are integrated for OTP verifications, booking confirmations, and user updates. Emails are sent using TLS encryption, ensuring the protection of user data and sensitive information. Additionally, Django's built-in authentication mechanisms, including secure password hashing, provide a robust security framework.

Performance and scalability are key considerations in the deployment of Sahyadri Trails. The application is hosted on PythonAnywhere, ensuring cloud scalability and reliable uptime. The architecture is designed to handle increasing user traffic efficiently while maintaining data integrity and system responsiveness.

In conclusion, Sahyadri Trails offers a structured, feature-rich trekking booking experience. With a well-integrated authentication system, chatbot support, and automated email notifications, the platform provides a modern and seamless approach to trek bookings in the Sahyadri mountains.

Implementation Details

1. Landing Page

The landing page of Sahyadri Trails is designed to provide an immersive and engaging experience for users interested in trekking in the Sahyadri mountains. It features a visually appealing layout with stunning trek images, informative vlogs, and a chatbot to assist users with queries. The page highlights popular trekking destinations, brief descriptions, and key CTAs like "Explore Treks" and "Book Now" to encourage user interaction. Additionally, it includes a navigation menu for easy access to different sections of the website, such as trek details, contact information, and user login. If a visitor is not logged in, they are prompted to sign up or log in to access booking features and personalized trek recommendations. The landing page ensures a seamless user experience by providing all essential trek-related information in an intuitive and visually engaging manner.



The screenshot shows the Sahyadri Trails website. At the top, there's a navigation bar with links for Explore, Bookings, View Details, Contact Us, and Profile. Below the header, there are three main trek details cards:

- Rajgad Fort - The Capital of Swaraja**: Explore the history of Rajgad Fort, once the capital of Chhatrapati Shivaji Maharaj.
- Harishchandragad - A Trekker's Paradise**: Experience the thrilling trek to Harishchandragad and witness the mesmerizing Konkan Kada.
- Rajgad Fort - The Royal Capital**: Learn about the glorious past of Rajgad Fort, the coronation place of Chhatrapati Shivaji Maharaj.

A "View More" button is located below these cards. To the right, a blue "Travel Bot" box contains a message: "explore Maharashtra's best Trek Places? Tell me where you want to go, and I'll help you plan an unforgettable trip! 🚶". Below the bot is a chat interface with a message: "Hello! Looking for the best treks in Maharashtra? Let me know your budget, and I'll suggest the best options! 🚶". There are "Send" and "Chat" buttons at the bottom of the bot box.

2. Explore Page

The Explore page in Sahyadri Trails helps users discover various trekking destinations with details like trek difficulty, duration, and images. It features a search and filter system for easy navigation, allowing users to explore treks before booking. To proceed with a booking, users must log in or register, ensuring a personalized experience.

The screenshot shows the "Explore Treks" page. At the top, there's a search bar with the placeholder "Search for treks...". Below the search bar, there are three trek cards:

- Rajmachi Trek**: Difficulty: moderate, Season: monsoon, Duration: weekend, Price: ₹1200.00 per person. Pickup Location: Lonavala Railway Station. Description: Breakfast and Lunch included. A scenic trek through lush green trails leading to the historic Rajmachi Fort.
- Kalsubai Peak**: Difficulty: hard, Season: monsoon, Duration: one-day, Price: ₹1800.00 per person. Pickup Location: Kasara Railway Station. Description: Breakfast and Evening Snacks included. The highest peak of Maharashtra, offering mesmerizing sunrise views.
- Harishchandragad Trek**: Difficulty: hard, Season: winter, Duration: weekend, Price: ₹2500.00 per person. Pickup Location: Kalyan Railway Station. Description: All meals included. A challenging trek with breathtaking views from the Konkan Kada cliff.

Difficulty: easy
Season: winter
Duration: one-day
Price: ₹800.00 per person
Pickup Location: Pune Railway Station
Drop Location: Pune Railway Station
Meals Included: Breakfast included
Description: A short and easy trek leading to a historic fort near Pune.

Difficulty: moderate
Season: monsoon
Duration: one-day
Price: ₹1000.00 per person
Pickup Location: Lonavala Railway Station
Drop Location: Lonavala Railway Station
Meals Included: Breakfast and Tea included
Description: A trek to Lohagad Fort, known for its strong fortifications and scenic views.

Difficulty: moderate
Season: winter
Duration: weekend
Price: ₹1500.00 per person
Pickup Location: Swargate Bus Stand, Pune
Drop Location: Swargate Bus Stand, Pune
Meals Included: Breakfast, Lunch, and Dinner included
Description: A trek to one of the most important forts of the Maratha Empire, known for its historical significance.

What Our Travelers Say



"The trek experience was incredible! The scenery was breathtaking, and the trails were well-marked."

★★★★★
- Ramesh K.



"A fantastic adventure! Everything was well organized, and I felt safe throughout the journey."

★★★★★
- Suresh D.

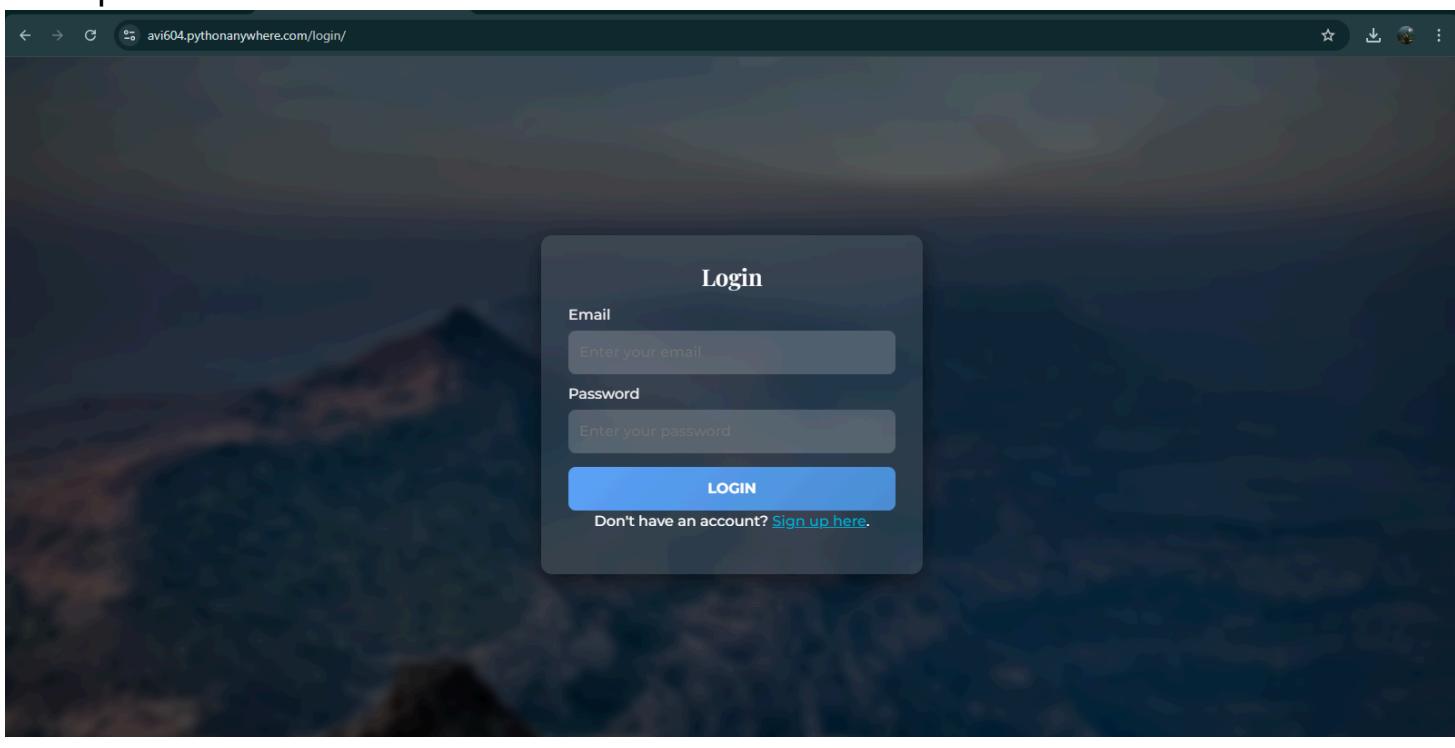


"This was my first trek, and it was unforgettable. I will definitely be coming back for more!"

★★★★★
- Sita Kumari A.

3. Booking Page

The Booking page in Sahyadri Trails provides a seamless and user-friendly experience for reserving treks. Users must first log in or register through OTP verification before accessing the booking functionality. The page displays detailed trek information, including location, duration, difficulty level, pricing, and available slots. Users can fill out a simple booking form with participant details and proceed to confirm their reservation. Users can view, manage, or download their booking details from the View Details section, ensuring a smooth and organized booking process.



The screenshot shows the 'Available Treks' section of the Sahyadri Trails website. It features three trek options: Rajmachi Trek, Kalsubai Peak, and Harishchandragad Trek, each with a thumbnail image, a title, a brief description, and a 'Book Now' button.

Rajmachi Trek
Difficulty: moderate
Season: monsoon
Duration: weekend
Price: ₹1200.00 per person
Pickup Location: Lonavala Railway Station
Drop Location: Lonavala Railway Station
Meals Included: Breakfast and Lunch included
Description: A scenic trek through lush green trails leading to the historic Rajmachi Fort.

Kalsubai Peak
Difficulty: hard
Season: monsoon
Duration: one-day
Price: ₹1800.00 per person
Pickup Location: Kasara Railway Station
Drop Location: Kasara Railway Station
Meals Included: Breakfast and Evening Snacks included
Description: The highest peak of Maharashtra, offering mesmerizing sunrise views.

Harishchandragad Trek
Difficulty: hard
Season: winter
Duration: weekend
Price: ₹2500.00 per person
Pickup Location: Kalyan Railway Station
Drop Location: Kalyan Railway Station
Meals Included: All meals included
Description: A challenging trek with breathtaking views from the Konkan Kada cliff.

The screenshot shows a booking confirmation message: 'Booking successful!' with an 'OK' button. Below it is a form for a new booking for the Korrigad Trek. The form fields include Name (Luffy), Email (avis0713@gmail.com), Date (19-03-2025), Number of People (4), and Total Price (₹3600). A 'Confirm Booking' button is at the bottom right.

Korrigad Trek
Difficulty: easy
Season: monsoon
Pickup Location: Lonavala Railway Station
Price: ₹900.00 per person

4. View Details

The View Details page in Sahyadri Trails allows users to access and manage their trek bookings efficiently. After logging in, users can navigate to this page to see a

comprehensive summary of their reservations, including trek name, date, location, total cost, and booking status. The page also provides an option to download booking details for offline reference. This feature ensures that users have easy access to their trek information and can keep track of their past and upcoming adventures.

The screenshot shows a web browser window with multiple tabs open at the top, including WhatsApp, My Bookings, (anonymous), MetaScifor - Google Drive, Project Report - Google Doc, and 127.0.0.1. The main content area has a dark background image of a mountainous landscape. At the top, there's a navigation bar with links for Explore, Bookings, View Details, Contact Us, and Profile. Below this, the title "My Bookings" is centered. Two booking entries are listed in boxes:

- Kalsubai Peak Booking Confirmed**
Date: March 16, 2025
[View Details](#) [Download](#)
- Korigad Trek Booking Confirmed**
Date: March 19, 2025
[View Details](#) [Download](#)

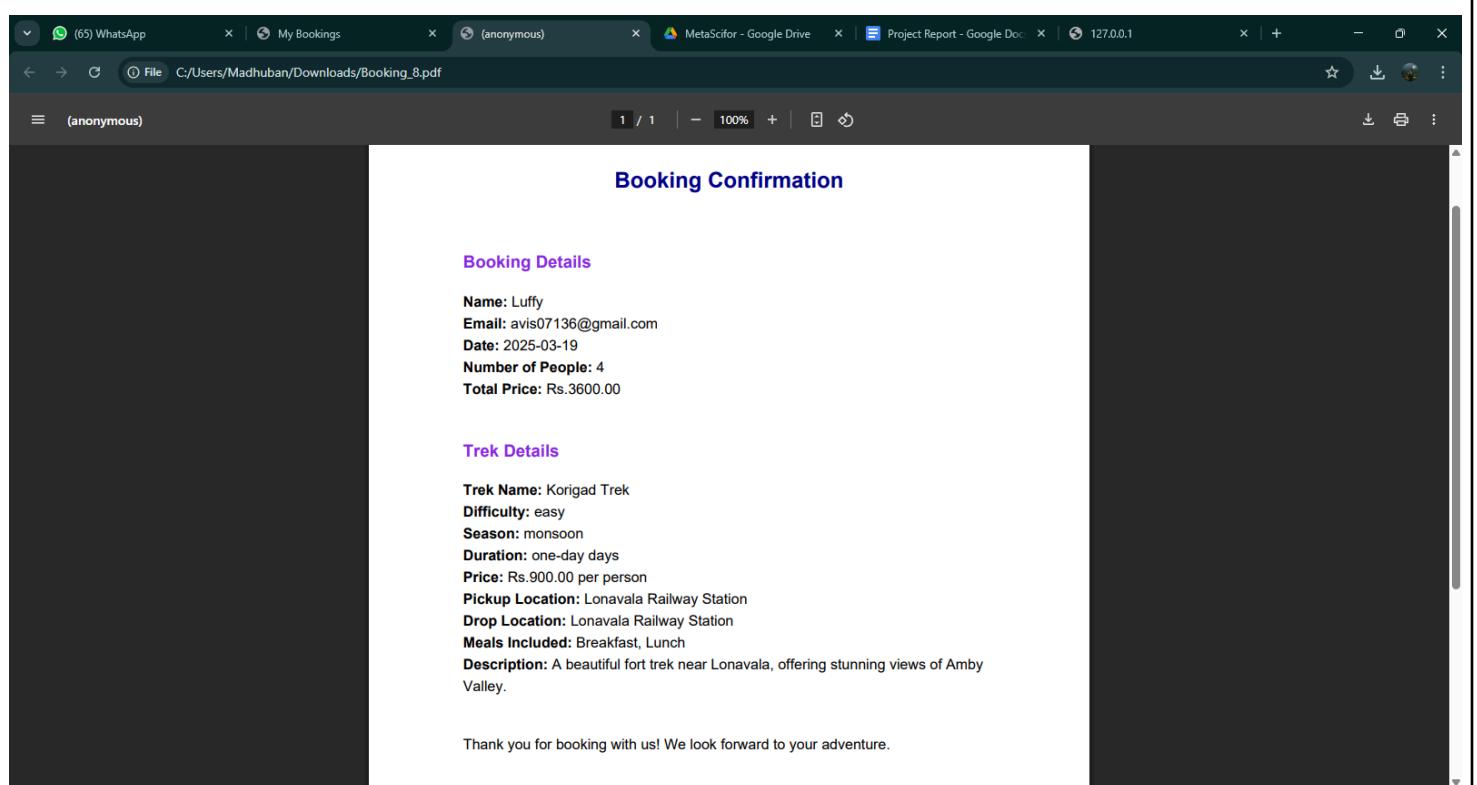
This screenshot shows the same web browser setup as the previous one. The "My Bookings" page is displayed with the "Booking Details" and "Trek Details" sections highlighted. The "Booking Details" section contains the following information:

- Name: Luffy
- Email: avis07136@gmail.com
- Date: March 19, 2025
- Number of People: 4
- Total Price: ₹3600.00

The "Trek Details" section contains the following information:

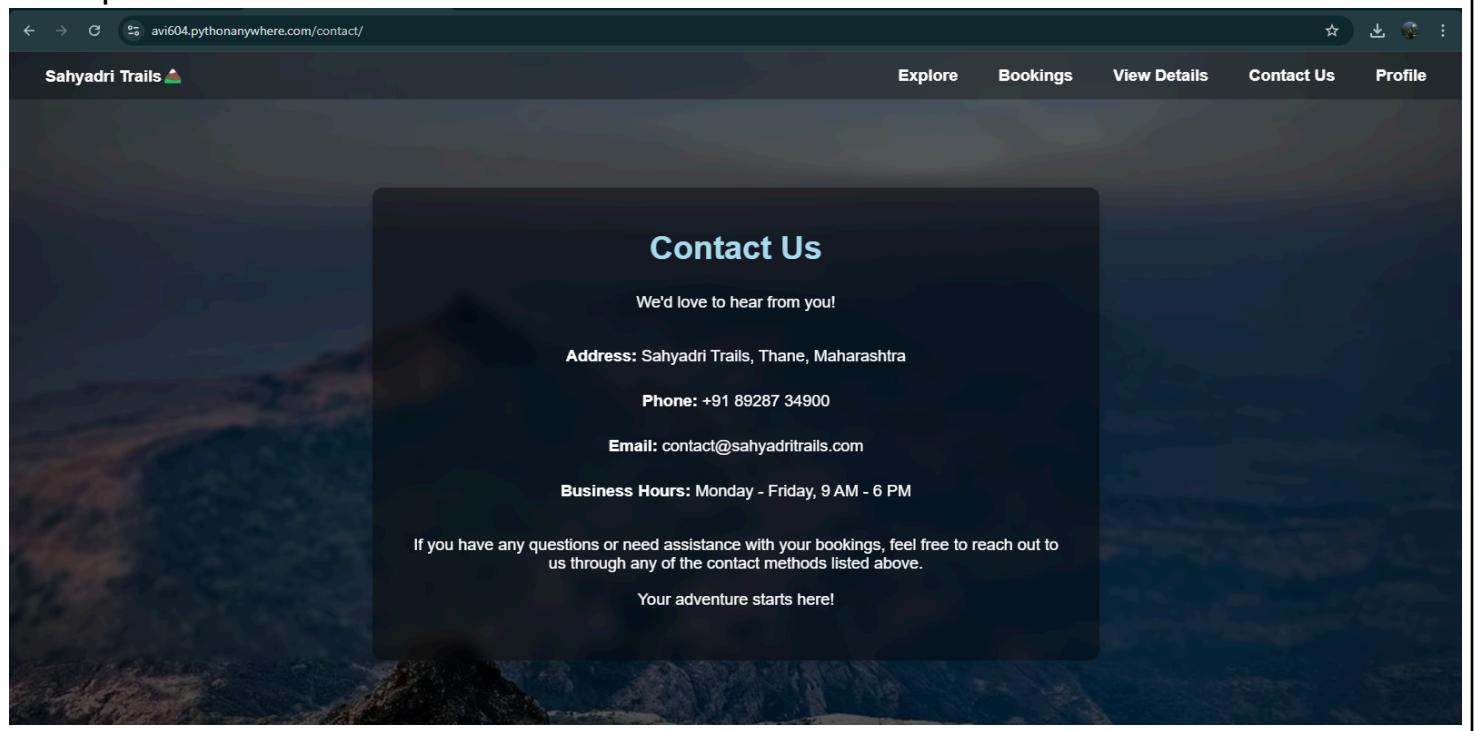
- Trek Name: Korigad Trek
- Difficulty: easy
- Season: monsoon
- Duration: one-day
- Price: ₹900.00 per person
- Pickup Location: Lonavala Railway Station
- Drop Location: Lonavala Railway Station
- Meals Included: Breakfast, Lunch
- Description: A beautiful fort trek near Lonavala, offering stunning views of Amby Valley.

At the bottom of the screen, a taskbar shows various system icons and the current date and time: 13:18 17-03-2025.



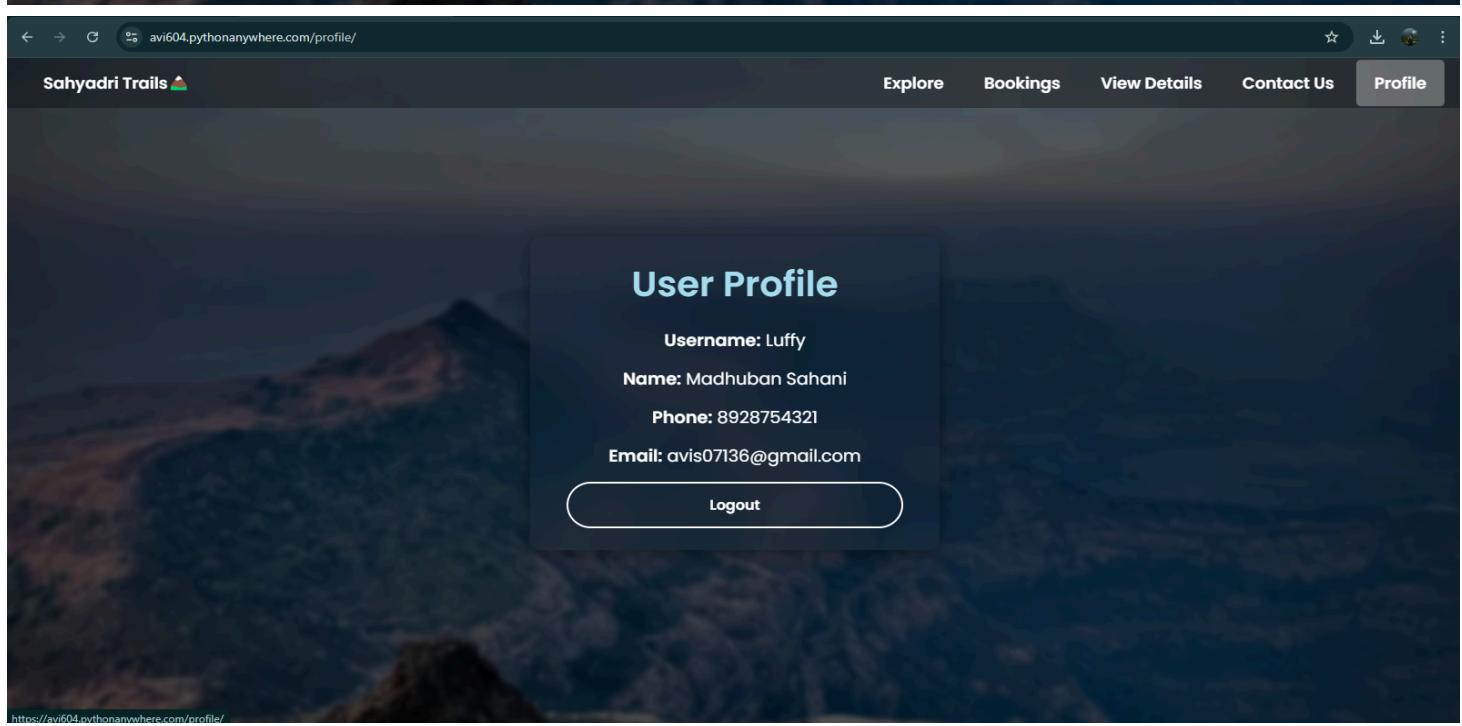
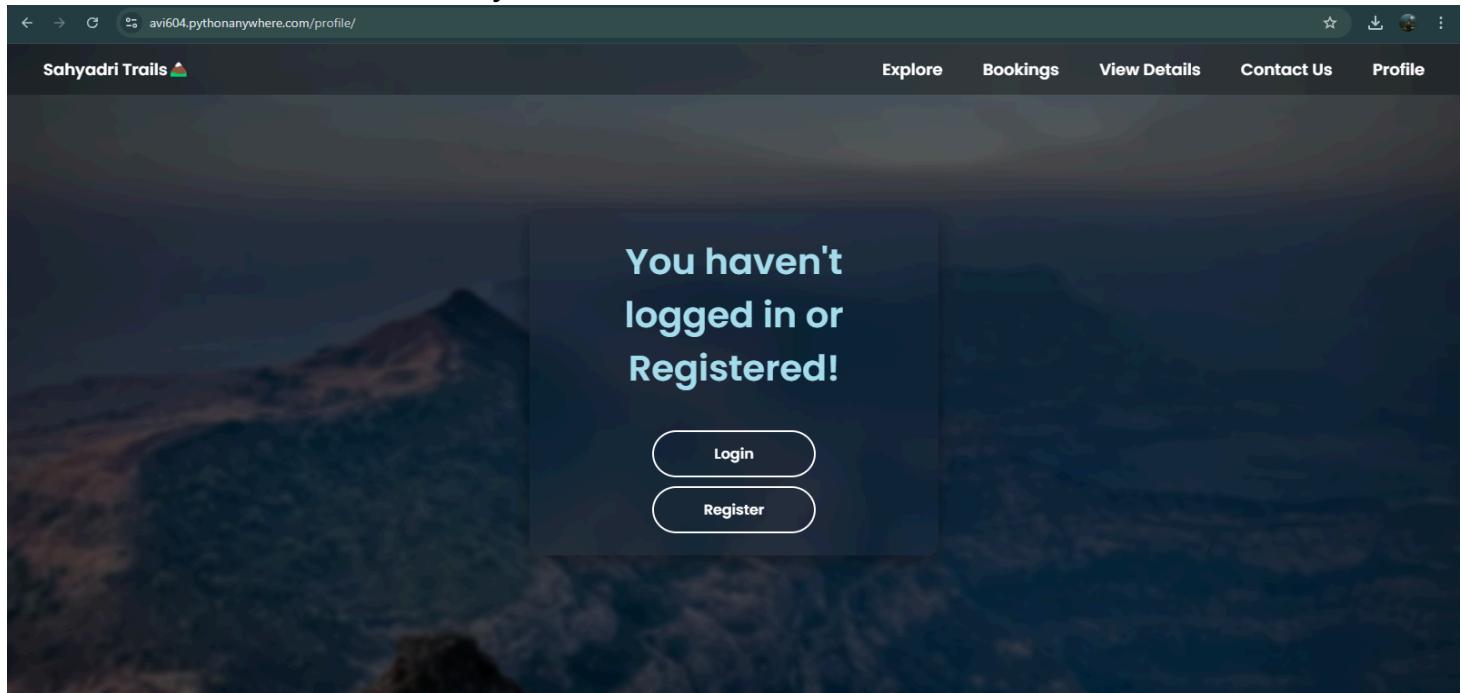
5. Contact Us

The Contact Us page in Sahyadri Trails provides users with essential contact details, including an email address, phone number, enabling seamless communication with the support team. It serves as a quick-access point for users seeking assistance with trek bookings, general inquiries, or other concerns. This page ensures that users can easily reach out for help and stay connected with the platform.



6. Profile Page

The profile page provides users with a seamless experience to view and manage their account details on the Sahyadri Trails platform. It displays essential user information such as their username, full name, phone number, and email address, ensuring a personalized touch. A clean and elegant interface, combined with a blurred background effect, enhances readability while maintaining a modern aesthetic. Authenticated users can easily log out, while new visitors are prompted to log in or register. Additionally, a secure and responsive edit profile section allows users to update their details effortlessly, making account management smooth and user-friendly.



7. Administration Panel

This Django admin customization enhances the management of a travel booking platform by providing a well-structured and user-friendly admin panel. The admin panel includes custom models for users, treks, bookings, and discounts, each with tailored search, filtering, and display options. A custom admin site with a unique header and login redirection improves usability. Additionally, an email notification system is integrated into the Discount model, allowing administrators to send promotional emails to users who have booked treks.

The screenshot shows the Django Admin Site dashboard. On the left, there's a sidebar with 'App' selected, showing 'Bookings', 'Discounts', 'Treks', and 'Users'. The main area displays a list of recent actions:

- Madhuban User
- Torana Trek Trek
- Sinhagad Trek Trek
- Sandhan Valley Trek Trek
- Rajmachi Trek Trek
- Rajgad Trek Trek
- Prabalgad Trek Trek
- Lohagad Trek Trek
- Kalsubai Peak Trek
- Harishchandragad Trek Trek

Key Features

A. Custom User Management: Admin panel displays user details like username, email, and phone number, with search and filtering options.

The screenshot shows the 'Users' list view in the Django Admin Site. The table displays the following data:

	Username	Full name	Email address	Phone number	Staff status	Active
<input type="checkbox"/>	saurabh3107	Saurabh Kahar	kaharsaurabh2017@gmail.com	9619281125	✖	✓
<input type="checkbox"/>	sandesh123	sandesh singh	sandeshsingh890@gmail.com	9869321336	✖	✖
<input type="checkbox"/>	Luffy	Madhuban Sahani	avis07136@gmail.com	8928754321	✖	✓
<input type="checkbox"/>	admin	-	madhubanshani22@gmail.com	-	✓	✓

B. Trek Management: Treks can be listed, searched, and filtered by attributes like difficulty, season, and location.

The screenshot shows a Django admin interface for trek management. The top navigation bar includes links for 'Home', 'App', and 'Treks'. The main title is 'Welcome to the Sahyadri Trails!! Admin'. A search bar and filter button are at the top right. Below is a table titled 'Treks' with 30 total entries. The table columns are: Trek id, Name, Difficulty, Season, Duration, Price, Pickup location, Drop location, Meals, Image, and Description. Each row contains a checkbox, the trek's ID, its name, details like difficulty and price, and a thumbnail image followed by a description. At the bottom, there are buttons for 'Go' and '0 of 30 selected'.

	Trek id	Name	Difficulty	Season	Duration	Price	Pickup location	Drop location	Meals	Image	Description
<input type="checkbox"/>	9	Andharban Trek	Moderate	Monsoon	One-Day	1400.00	Lonavala Railway Station	Lonavala Railway Station	Breakfast and Lunch included		A dense forest trek filled with waterfalls, streams, and stunning valley views.
<input type="checkbox"/>	17	Anjaneri Trek	Easy	Winter	One-Day	900.00	Nashik	Nashik	Breakfast		A religious trek believed to be the birthplace of Lord Hanuman, with scenic views.
<input type="checkbox"/>	22	Avchitgad Fort Trek	Moderate	Monsoon	One-Day	1400.00	Roha, Maharashtra	Roha, Maharashtra	Breakfast, Lunch		A thrilling fort trek with lush greenery, waterfalls, and panoramic views.
<input type="checkbox"/>	23	Bhimashankar Trek	Moderate	Monsoon	One-Day	1400.00	Karjat Railway Station	Karjat Railway Station	Breakfast, Lunch		A scenic jungle trek leading to an ancient temple of Lord Shiva.
<input type="checkbox"/>	24	Dukes Nose Trek	Easy	Monsoon	-	800.00	Lonavala Railway Station	Lonavala Railway Station	Breakfast		A short hike to a stunning viewpoint offering panoramic valley views.
<input type="checkbox"/>	27	Garbett Plateau Trek	Moderate	Monsoon	One-Day	1300.00	Neral Railway Station	Neral Railway Station	Breakfast, Lunch		A picturesque trek near Matheran, known for its lush greenery and scenic plateau.
<input type="checkbox"/>	14	Gorakhgad Trek	Hard	Winter	One-Day	1500.00	Kalyan Railway Station	Kalyan Railway Station	Breakfast, Lunch		A steep and adventurous trek with caves and breathtaking summit views.
<input type="checkbox"/>	20	Harihar Fort Trek	Hard	Winter	Weekend	2000.00	Kasara Railway Station	Kasara Railway Station	Breakfast, Lunch, Dinner		An adventurous trek with a steep rock-cut staircase leading to a breathtaking summit.
<input type="checkbox"/>	3	Harishchandragad Trek	Hard	Winter	Weekend	2500.00	Kalyan Railway Station	Kalyan Railway Station	All meals included		A challenging trek with breathtaking views from the Konkan Kada cliff.

C. Booking Management: Admins can track bookings, search by trek name, and filter by date.

The screenshot shows a Django admin interface for booking management. The top navigation bar includes links for 'Home', 'App', and 'Bookings'. The main title is 'Welcome to the Sahyadri Trails!! Admin'. A search bar and filter button are at the top right. Below is a table titled 'Bookings' with 8 total entries. The table columns are: Name, Email, Date, Trek, Number of people, and Total price. Each row contains a checkbox, the booker's name and email, the booking date, the trek name, the number of people, and the total price. At the bottom, there are buttons for 'Go' and '0 of 8 selected'.

	Name	Email	Date	Trek	Number of people	Total price
<input type="checkbox"/>	Luffy	avis0713@gmail.com	March 19, 2025	Korigad Trek	4	3600.00
<input type="checkbox"/>	saurabh3107	kaharsaurabh2017@gmail.com	March 28, 2025	Lohagad Trek	5	5000.00
<input type="checkbox"/>	saurabh3107	kaharsaurabh2017@gmail.com	March 21, 2025	Kalsubai Peak	3	5400.00
<input type="checkbox"/>	Luffy	avis0713@gmail.com	March 16, 2025	Kalsubai Peak	2	3600.00
<input type="checkbox"/>	admin	madhubanshani22@gmail.com	March 15, 2025	Korigad Trek	2	1800.00
<input type="checkbox"/>	admin	madhubanshani22@gmail.com	March 16, 2025	Andharban Trek	3	4200.00
<input type="checkbox"/>	admin	madhubanshani22@gmail.com	March 13, 2025	Harishchandragad Trek	5	5000.00
<input type="checkbox"/>	admin	madhubanshani22@gmail.com	March 15, 2025	Rajmachi Trek	2	2000.00

D. Discount Notifications: Admins can send discount emails to past customers, using an HTML email template for better presentation.

Welcome to the Sahyadri Trails!! Admin

Go to Dashboard admin View site

Home > App > Discounts

Discounts

8 total

<input type="checkbox"/>	Title	Percentage	Start date	End date	Created at	Notify Users
<input type="checkbox"/>	Independence Day Trek	15.0	Aug. 12, 2025, midnight	Aug. 17, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	Summer Escape Deal	10.0	April 1, 2025, midnight	May 31, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	New Year Special	22.0	Dec. 28, 2024, midnight	Jan. 2, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	Ganesh Festival Offer	12.0	Sept. 7, 2025, midnight	Sept. 18, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	Makar Sankranti Trek	18.0	Jan. 12, 2025, midnight	Jan. 16, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	Diwali Dhamaka Trek	25.0	Oct. 28, 2025, midnight	Nov. 5, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	Monsoon Adventure Deal	15.0	June 15, 2025, midnight	Sept. 15, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	Shiv Jayanti Special	20.0	Feb. 16, 2025, midnight	Feb. 20, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>

8 total

Welcome to the Sahyadri Trails!! Admin

Go to Dashboard admin View site

Home > App > Discounts

Discount notification sent to 3 users!

Discounts

8 total

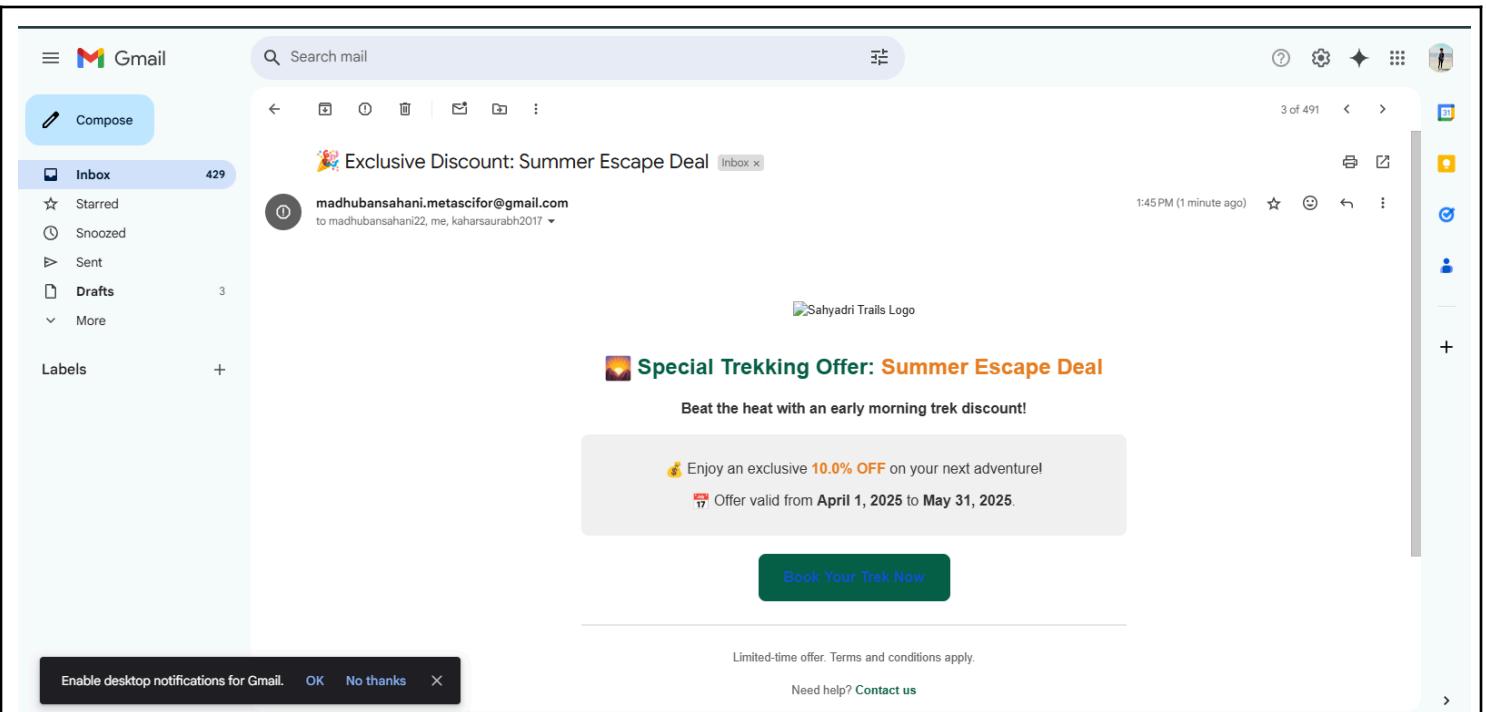
<input type="checkbox"/>	Title	Percentage	Start date	End date	Created at	Notify Users
<input type="checkbox"/>	Independence Day Trek	15.0	Aug. 12, 2025, midnight	Aug. 17, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input checked="" type="checkbox"/>	Summer Escape Deal	10.0	April 1, 2025, midnight	May 31, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	New Year Special	22.0	Dec. 28, 2024, midnight	Jan. 2, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	Ganesh Festival Offer	12.0	Sept. 7, 2025, midnight	Sept. 18, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	Makar Sankranti Trek	18.0	Jan. 12, 2025, midnight	Jan. 16, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	Diwali Dhamaka Trek	25.0	Oct. 28, 2025, midnight	Nov. 5, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	Monsoon Adventure Deal	15.0	June 15, 2025, midnight	Sept. 15, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>
<input type="checkbox"/>	Shiv Jayanti Special	20.0	Feb. 16, 2025, midnight	Feb. 20, 2025, midnight	March 16, 2025, 6:29 a.m.	<button>Send Notification</button>

8 total

1 of 8 selected Go

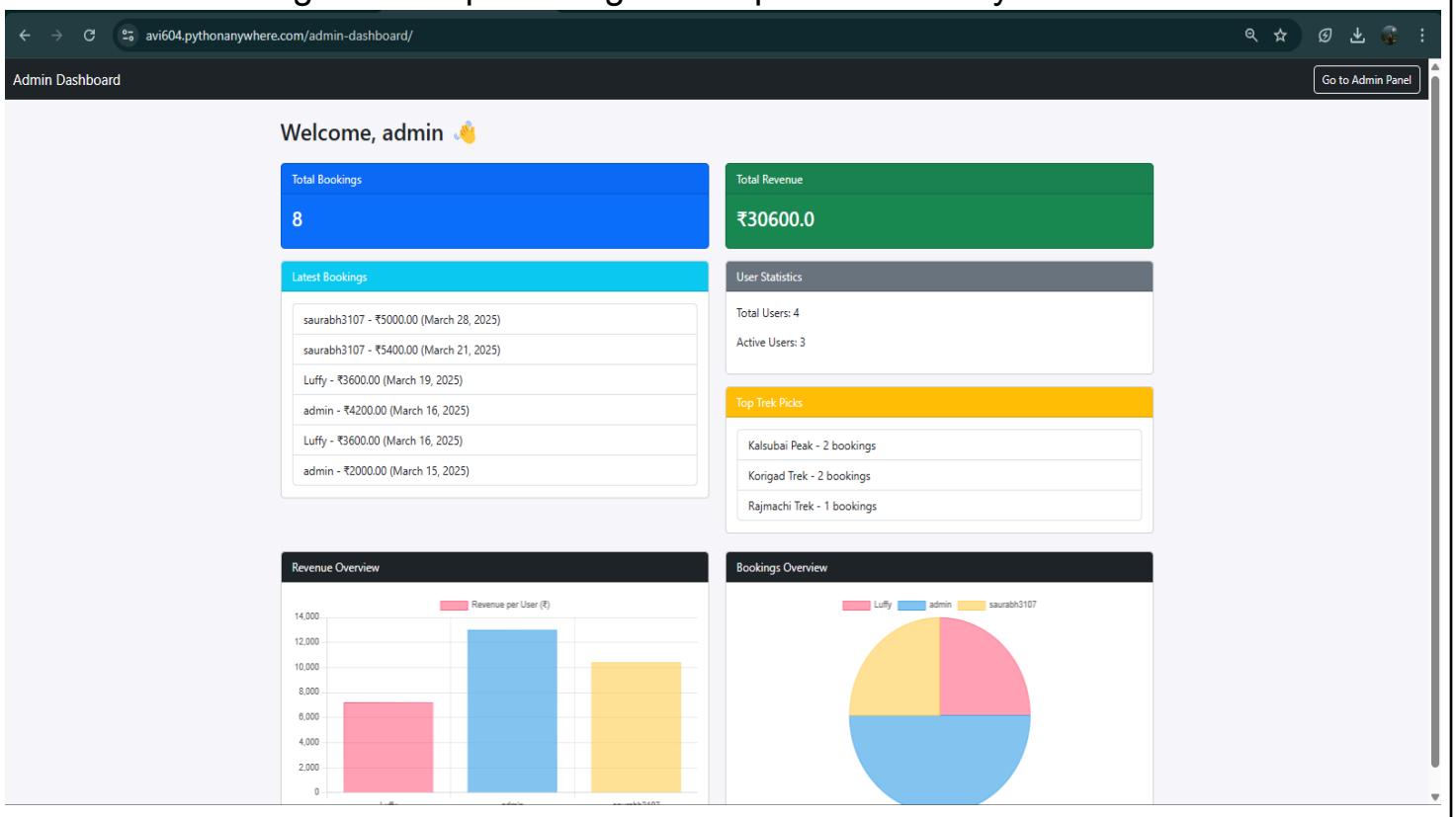
https://av1604.pythonanywhere.com/admin/app/discount/?o=-4

Sports headline While Lewis Ha...



E. Dashboard for Analysis:

A custom admin site is implemented with a modified header, title, and login redirection, ensuring that authenticated users are directed to a dashboard. This dashboard provides a comprehensive overview of key metrics, including the number of users, top pick treks, total bookings, total revenue offering admins quick insights into platform activity.



8. Models

```
from django.contrib.auth.models import AbstractUser
from django.db import models
from django.utils import timezone

class CustomUser(AbstractUser):
    full_name = models.CharField(max_length=255)
    phone_number = models.CharField(max_length=15, unique=True)
    otp = models.CharField(max_length=6, null=True, blank=True) # Store OTP
    is_verified = models.BooleanField(default=False)

    def __str__(self):
        return self.username

class Trek(models.Model):
    trek_id = models.AutoField(primary_key=True)
    name = models.CharField(max_length=200)
    difficulty = models.CharField(
        max_length=20,
        choices=[('easy', 'Easy'), ('moderate', 'Moderate'), ('hard', 'Hard')]
    )
    season = models.CharField(
        max_length=20,
        choices=[('monsoon', 'Monsoon'), ('winter', 'Winter'), ('summer', 'Summer')]
    )
    duration = models.CharField(
        max_length=20,
        choices=[('one-day', 'One-Day'), ('weekend', 'Weekend')]
    )
    price = models.DecimalField(max_digits=10, decimal_places=2)
    image = models.ImageField(upload_to='media/')
    description = models.TextField()
    pickup_location = models.CharField(max_length=255, default="Nearest Railway Station")
    drop_location = models.CharField(max_length=255, default="Lonavala Railway Station")
    meals = models.TextField(default="Breakfast, Lunch, Dinner included")

    def __str__(self):
        return self.name

class Booking(models.Model):
    trek = models.ForeignKey('Trek', on_delete=models.CASCADE)
    name = models.CharField(max_length=255) # Store user-entered name
    email = models.EmailField() # Store user-entered email
    date = models.DateField() # User-selected date
    number_of_people = models.PositiveIntegerField() # User-selected number of people
    total_price = models.DecimalField(max_digits=10, decimal_places=2, blank=True, null=True)

    def save(self, *args, **kwargs):
        """ Automatically calculate total price before saving """
        if self.trek: # Ensure trek is assigned
            self.total_price = self.trek.price * self.number_of_people
        super().save(*args, **kwargs)
```

```
def __str__(self):
    return f"{self.name} - {self.date} ({self.number_of_people} people)"

class Discount(models.Model):
    title = models.CharField(max_length=200) # Discount Title
    description = models.TextField() # Discount Details
    percentage = models.FloatField() # Discount Percentage
    start_date = models.DateTimeField(default=timezone.now) # Discount Start Date
    end_date = models.DateTimeField() # Discount End Date
    created_at = models.DateTimeField(auto_now_add=True) # Date Created

    def is_active(self):
        """Check if the discount is currently active based on start and end dates."""
        now = timezone.now()
        return self.start_date <= now <= self.end_date

    def __str__(self):
        return f"{self.title} - {self.percentage}% (Valid: {self.start_date.date()} to {self.end_date.date()})"
```

Challenges Faced

During the development of this project, we encountered several challenges that required innovative problem-solving and optimization. One of the major difficulties was implementing a custom admin dashboard that not only modified the header and title but also redirected users to a dashboard after login. Ensuring a seamless redirection while maintaining Django's built-in authentication security was crucial, as any misconfiguration could lead to access control issues or unintended navigation errors.

Another challenge was managing email notifications for discounts, where we needed to dynamically fetch recipient lists from existing bookings. Formatting emails to include both HTML and plain text versions required careful structuring to ensure proper rendering across different email clients. Additionally, handling potential failures in email delivery while logging successful attempts was necessary to track notifications efficiently.

Booking management also presented obstacles, particularly in optimizing queries to fetch trek details and user bookings without causing performance bottlenecks. Since some queries involved filtering and aggregating data, optimizing database interactions and using indexing were crucial for smooth operations.

Ensuring secure user authentication and permission handling for admin users was another critical aspect. We had to manage access controls carefully so that only authorized personnel could modify trek details, apply discounts, and view customer data. Implementing role-based access and restricting certain functionalities to superusers was an important step in securing the admin panel.

Finally, improving the user experience for administrators was a key focus. We added intuitive search functionality, filters, and custom action buttons to streamline trek and discount management. These features required careful UI adjustments and backend processing to ensure efficiency without cluttering the admin panel.

Despite these challenges, through persistent debugging, thorough testing, and iterative improvements, we successfully built a robust, scalable, and user-friendly travel management system.

Future Scope

1. Payment Gateway Integration:

Adding secure online payment integration (e.g., Razorpay, Stripe, PayPal) would automate transactions, reducing cancellations and ensuring seamless booking confirmation.

2. Real-Time Trek Availability & Cancellation Policy:

Implementing a real-time trek availability system would prevent overbookings and provide transparency to users. Additionally, integrating a structured cancellation policy with automated refund processing would make the platform more reliable.

3. Automated Discount System:

Instead of manually sending discount emails, an automated discount system that applies offers based on user activity (e.g., first-time booking, group booking) could be introduced. This would streamline promotions and enhance user retention.

4. Reviews & Ratings System:

Adding a review and rating feature would allow users to share feedback about their trek experiences, helping new customers make informed decisions and improving service quality.

Conclusion

Sahyadri Trails successfully addresses the challenges faced by trekking enthusiasts in planning and booking treks in the Sahyadri mountain range. By leveraging Django as the backend framework and integrating key features such as OTP-verified authentication, secure login, and a structured booking management system, the platform ensures a seamless and reliable experience for users.

The inclusion of an Explore page, a Profile Management System, and an Admin Panel enhances both user engagement and operational efficiency. Additionally, the integration of a chatbot assistant and vlogs enriches the user experience by providing interactive guidance and personalized trek recommendations. The Dashboard for Analysis and Discount Management System further empower administrators with data-driven insights and promotional tools to improve user retention and revenue growth.

From a technical perspective, the system's architecture ensures scalability, security, and performance optimization. The use of SQLite for database management, PythonAnywhere for deployment, and SMTP for email integration enables a well-rounded solution that is both functional and secure. The platform's built-in security features, such as CSRF protection and password hashing, ensure data integrity and user privacy.

Looking ahead, future enhancements like real-time chat support, AI-driven trek recommendations, multilingual support, and user-generated reviews can further refine the platform's functionality. With its well-structured design and potential for growth, Sahyadri Trails stands as a comprehensive and user-centric solution for trekking enthusiasts, making the adventure planning process more efficient and enjoyable.

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