

Capture Moments – Cloud-Based Photographer Booking Platform

Project Description

Capture Moments is an innovative web-based platform that simplifies the process of discovering, booking, and managing photography sessions. Aimed at couples, families, and event organizers, it eliminates the hassle of manual bookings and provides a beautiful, seamless experience from login to shoot completion.

Built using:

- Flask (Python) for the backend
- HTML/CSS/Bootstrap for the frontend
- AWS DynamoDB for storing user and booking data
- AWS EC2 for deployment
- AWS SES (or SMTP) for sending confirmations and support replies

Scenarios

Scenario 1: Hassle-free Booking System

Users can browse photographers based on categories like Thematic, Luxury & Destination, and Creative & Conceptual. Real-time availability and costs are shown. Users book shoots and get immediate confirmation with confetti animation.

Scenario 2: Real-time Support & Communication

A dedicated support system allows users to raise issues. Admins can view and respond from a separate dashboard. SNS or SMTP emails notify both parties.

Scenario 3: Location Discovery for Shoots

Users can explore curated shoot locations across India, visualized with images, descriptions, and thematic tags.

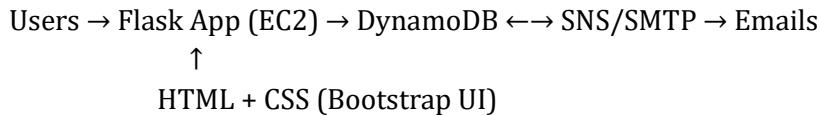
Tech Stack

Tech Stack:

- Flask – Web framework (Python)
- DynamoDB – NoSQL cloud database
- AWS EC2 – Hosting platform

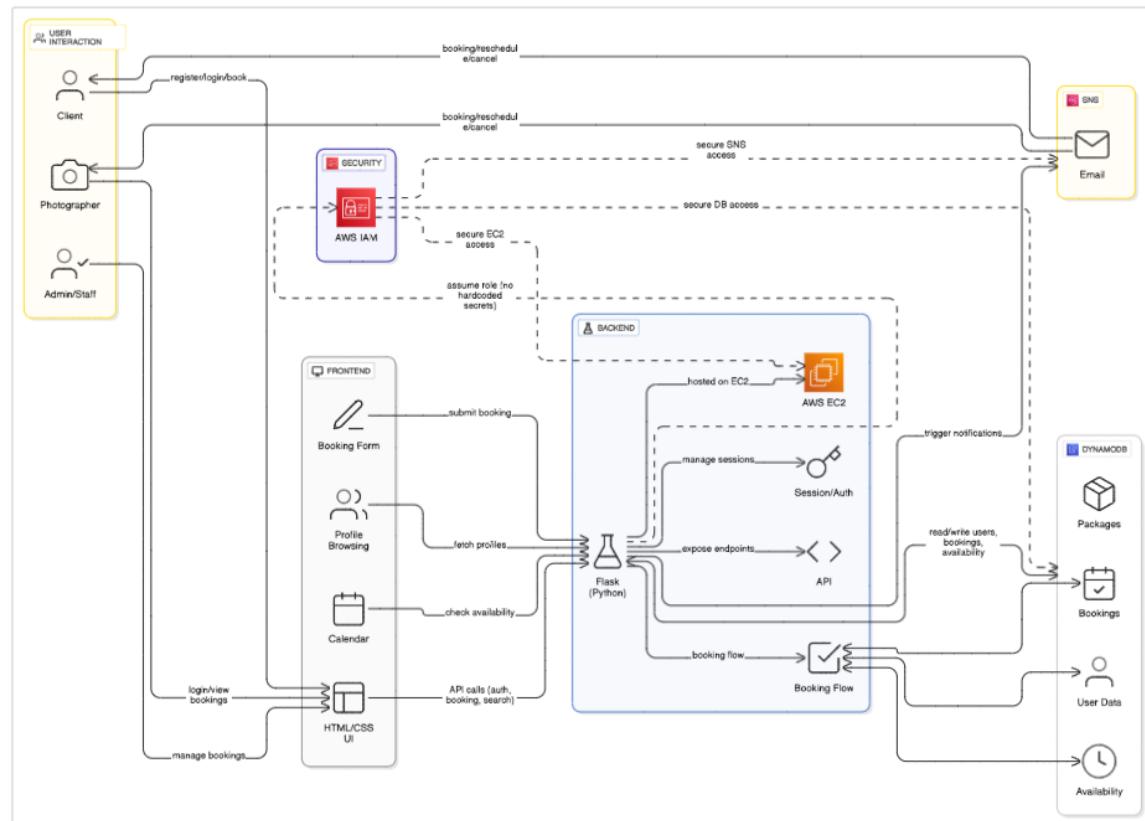
- Bootstrap – Styling
- SMTP/SNS – Notifications and email confirmations

AWS Architecture Overview:



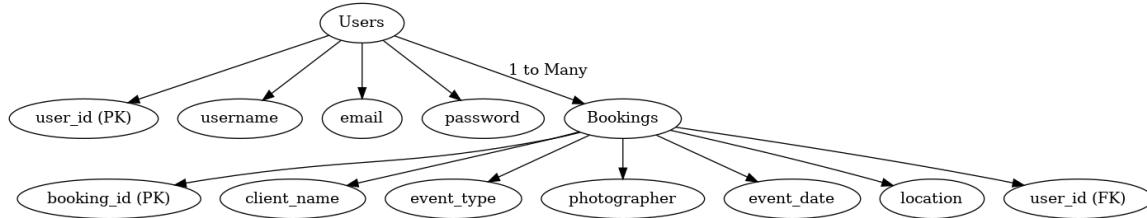
Architecture

This AWS-based architecture powers a scalable and secure web application using Amazon EC2 for hosting the backend, with a lightweight framework like Flask handling core logic. Application data is stored in Amazon DynamoDB, ensuring fast, reliable access, while user access is managed through AWS IAM for secure authentication and control. Real-time alerts and system notifications are enabled via Amazon SNS, enhancing communication and user engagement.



Entity Relationship (ER) Diagram

An ER (Entity-Relationship) diagram visually represents the logical structure of a database by defining entities, their attributes, and the relationships between them. It helps organize data efficiently by illustrating how different components of the system interact and relate. This structured approach supports effective database normalization, data integrity, and simplified query design.



Features

Feature	Description
 Sign Up/Login	Register with email or user ID; login using either.
 View Photographers	Filter by category; see availability, images, and cost.
 Book Photographer	Choose date → Confirm → See booking + confetti.
 Explore Shoot Locations	Explore curated places based on shoot category.
 Support System	Submit issues, admins reply from their panel, emails sent via SMTP/SNS.
 Forgot Password	Update password via email or ID without admin.
 Chat	Users and admins can exchange live messages (optional extension).
 Email Notifications	Booking confirmations and support updates sent via email.

Project Setup Walkthrough

Milestone 1: AWS & IAM

Activity 1.1: Create AWS Account

Activity 1.2: Setup IAM Role with:

- AmazonDynamoDBFullAccess
- AmazonEC2FullAccess

The screenshot shows the AWS Management Console interface for the EC2 service. The left sidebar navigation includes 'Dashboard', 'EC2 Global View', 'Events', 'Instances' (selected), 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Capacity Reservations', 'Images' (AMIs, AMI Catalog), and 'Elastic Block Store' (Volumes, Snapshots, Lifecycle Manager). The main content area displays 'Instances (1/2) Info' for two instances: 'Capture-Moments1' (running, t2.micro, us-east-1c) and 'medtrack-server' (terminated, t2.micro, us-east-1c). Below the table, a detailed view for 'i-01b78c9b7d945ec7c (Capture-Moments1)' is shown, including sections for Details, Status and alarms, Monitoring, Security, Networking, Storage, and Tags. The instance summary shows details like Instance ID (i-01b78c9b7d945ec7c), IPv4 address (54.88.253.113), Instance state (Running), and Hostname type (IP name: ip-172-31-23-252.ec2.internal). The bottom status bar shows the date (04-07-2025), time (21:40), and system icons.

Milestone 2: DynamoDB Setup

Table: users

- email (partition key)
- user_id
- password

The screenshot shows the AWS DynamoDB console interface. On the left, there's a sidebar with options like Dashboard, Tables, Explore items (which is selected), PartQL editor, Backups, Exports to S3, Imports from S3, Integrations, Reserved capacity, and Settings. Below that is a DAX section with Clusters, Subnet groups, Parameter groups, and Events. The main area has a search bar and a navigation bar with 'Scan' and 'Query' tabs. Under 'Scan', it says 'Select a table or index' (Table - users1) and 'Select attribute projection' (All attributes). There's a 'Filters - optional' section with 'Run' and 'Reset' buttons. A message box says 'Completed - Items returned: 0 - Items scanned: 0 - Efficiency: 100% - RCU consumed: 2'. Below this is a table titled 'Table: users1 - Items returned (2)' showing two items: 'junnu_19' with password 'chitti' and 'srav@12' with password 'JUNNU'. At the bottom, there's a CloudShell tab, a feedback link, and the AWS footer with copyright information and links to Privacy, Terms, and Cookie preferences.

Table: bookings
- booking_id (UUID)

The screenshot shows the AWS DynamoDB console interface. On the left, there's a sidebar with Dashboard, Tables (selected), Explore items, PartQL editor, Backups, Exports to S3, Imports from S3, Integrations, Reserved capacity, and Settings. Below that is a DAX section with Clusters, Subnet groups, Parameter groups, and Events. The main area shows a message 'The chat1 table was created successfully.' followed by a table titled 'Tables (6) Info'. The table has columns for Name, Status, Partition key, Sort key, Indexes, Replication Regions, Deletion protection, and Favorite. The tables listed are: booking1, chat1, photographers, photographers1, support1, and users1. All are Active with their respective primary keys. The screenshot also shows the Windows taskbar at the bottom.

- photographer_id
- date
- user_email

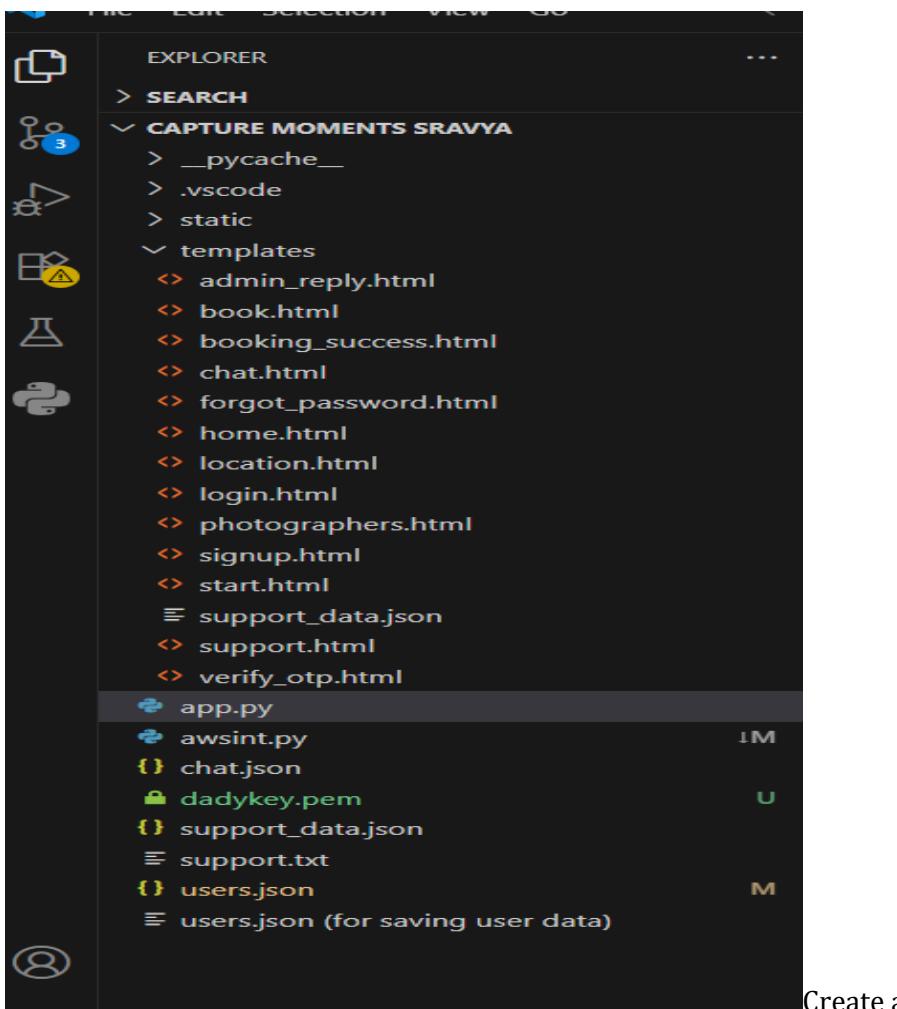
The screenshot shows the AWS DynamoDB console interface. On the left, there's a navigation sidebar with links like 'Dashboard', 'Tables', 'Explore items', 'PartQL editor', 'Backups', 'Exports to S3', 'Imports from S3', 'Integrations', 'Reserved capacity', and 'Settings'. Below that is a section for 'DAX' with links to 'Clusters', 'Subnet groups', 'Parameter groups', and 'Events'. The main area has a search bar at the top with the placeholder 'Search' and a dropdown for 'Region' set to 'United States (N. Virginia)'. There are tabs for 'Items | Amazon DynamoDB Manager' and 'Amazon CloudWatch Metrics'. The URL in the address bar is <https://us-east-1.console.aws.amazon.com/dynamodbv2/home?region=us-east-1#item-explorer?table=photographers1>.

The central part of the screen shows the 'Explore items' view for the 'photographers1' table. It includes a sidebar with two tables: 'photographers' and 'photographers1' (which is selected). To the right, there are sections for 'Select a table or index' (set to 'Table - photographers1') and 'Select attribute projection' (set to 'All attributes'). Below these are 'Filters - optional' and 'Run' and 'Reset' buttons. A green notification box says 'Completed - Items returned: 3 - Items scanned: 3 - Efficiency: 100% - RCU consumed: 2'. The table itself has columns: 'photographers1_id (String)', 'availability', 'category', 'cost', and 'image'. The data rows are:

photographers1_id (String)	availability	category	cost	image
leo	("2025-06-21",...)	Creative & ...	95000	https://me...
megha	("2025-06-19",...)	Luxury & D...	120000	https://ima...
krish	("2025-06-20",...)	Thematic S...	80000	https://ww...

At the bottom, there are links for 'CloudShell', 'Feedback', 'Privacy', 'Terms', and 'Cookie preferences'. The status bar at the very bottom shows the date '04-07-2025' and time '22:05'.

Milestone 3: Flask Application Development



Use boto3 to connect to DynamoDB

Routes:

/signup
/login
/forgot-password
/show-photographers
/book
/location/support
/admin/reply

Milestone 4: EC2 Deployment

Launch EC2 Instance

sudo yum install python3 git

Clone your repo:

```
ec2-user@ip-172-31-23-52:~
```

```
laskh@Junnu: MING64 ~ (master)
1 cd "C:/Users/laskh/OneDrive/Desktop/capture moments srayya"
laskh@Junnu: MING64 ~/OneDrive/Desktop/capture moments srayya (main)
$ ssh -i "dadyKey.pem" ec2-user@ec2-54-88-253-113.compute-1.amazonaws.com
  Amazon Linux 2
  AL2 End of Life is 2026-06-30.
  A newer version of Amazon Linux is available!
  Amazon Linux 2023, GA and supported until 2028-03-15.
  https://aws.amazon.com/linux/amazon-linux-2023/
[ec2-user@ip-172-31-23-252 ~]$ sudo yum update -y
Loaded plugins: extras.suggestions, langpacks, priorities, update-motd
amzn2-core
Nothing to do
 1 package marked for updates
[ec2-user@ip-172-31-23-252 ~]$ sudo yum install python3 git -y
Loaded plugins: extras.suggestions, langpacks, priorities, update-motd
Package python3-3.7.7-16.1.amzn2.0.17.x86_64 already installed and latest version
Resolved: python3-3.7.7-16.1.amzn2.0.17.x86_64
  Running transaction check
--> Package git.x86_64 0:2.47.1-1.amzn2.0.3 will be installed
    Processing Dependency: git-core = 2.47.1-1.amzn2.0.3 For package: git-2.47.1-1.amzn2.0.3.x86_64
--> Preparing... ################################# [100%]
--> Processing Dependency: perl-Git = 2.47.1-1.amzn2.0.3 for package: git-2.47.1-1.amzn2.0.3.x86_64
--> Processing Dependency: perl(GIT) For package: git-2.47.1-1.amzn2.0.3.x86_64
--> Preparing... ################################# [100%]
--> Processing Dependency: perl(Error) For package: git-2.47.1-1.amzn2.0.3.x86_64
--> Running transaction check
--> Package git-core.x86_64 0:2.47.1-1.amzn2.0.3 will be installed
--> Package git-core-doc.noarch 2.47.1-1.amzn2.0.3 will be installed
--> Preparing... ################################# [100%]
--> Processing Dependency: perl(GIT) For package: git-2.47.1-1.amzn2.0.3.noarch
--> Package perl-TermReadKey.x86_64 0:2.30-20.amzn2.0.2 will be installed
--> Running transaction check
--> Package perl-TermReadKey.x86_64 1:0.17020-2.amzn2 will be installed
--> Finished Dependency Resolution

Dependencies Resolved



| Package                      | Arch   | Version            | Repository | Size  |
|------------------------------|--------|--------------------|------------|-------|
| Installing:                  |        |                    |            |       |
| git                          | x86_64 | 2.47.1-1.amzn2.0.3 | amzn2-core | 57 k  |
| Installing for dependencies: |        |                    |            |       |
| git-core                     | x86_64 | 2.47.1-1.amzn2.0.3 | amzn2-core | 11 M  |
| git-core-doc                 | noarch | 2.47.1-1.amzn2.0.3 | amzn2-core | 3.2 M |
| perl-Error                   | noarch | 1:0.17020-2.amzn2  | amzn2-core | 32 k  |
| perl-Site                    | noarch | 2.47.1-1.amzn2.0.3 | amzn2-core | 44 k  |
| perl-TermReadKey             | x86_64 | 2.30-20.amzn2.0.2  | amzn2-core | 31 k  |



```
Transaction Summary
```



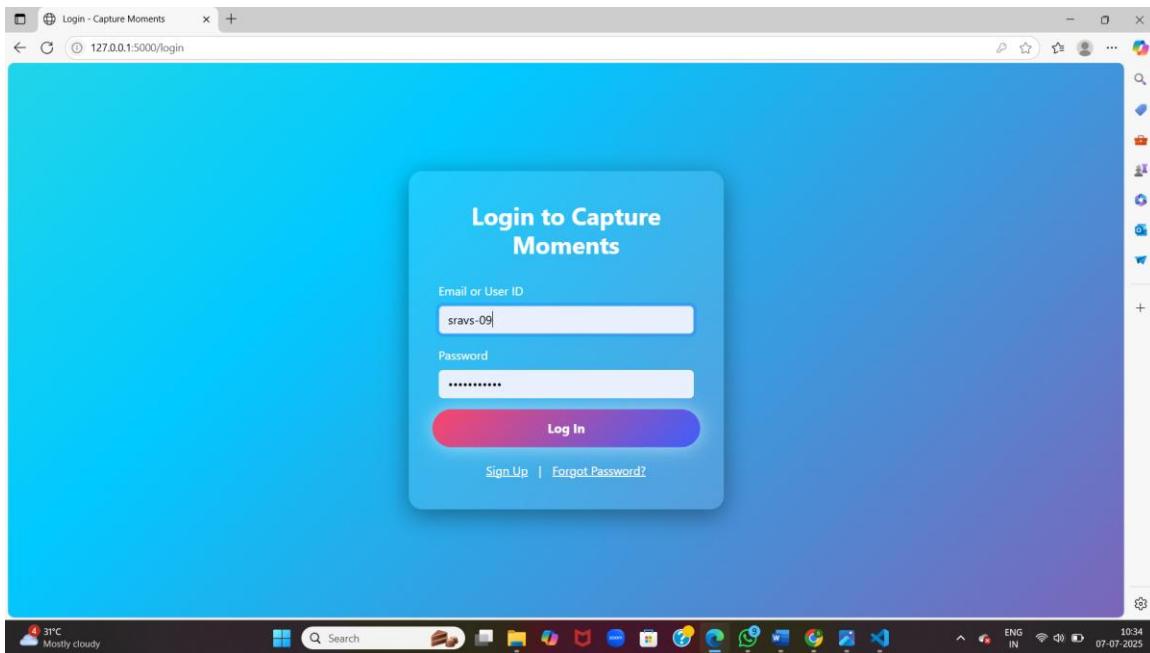
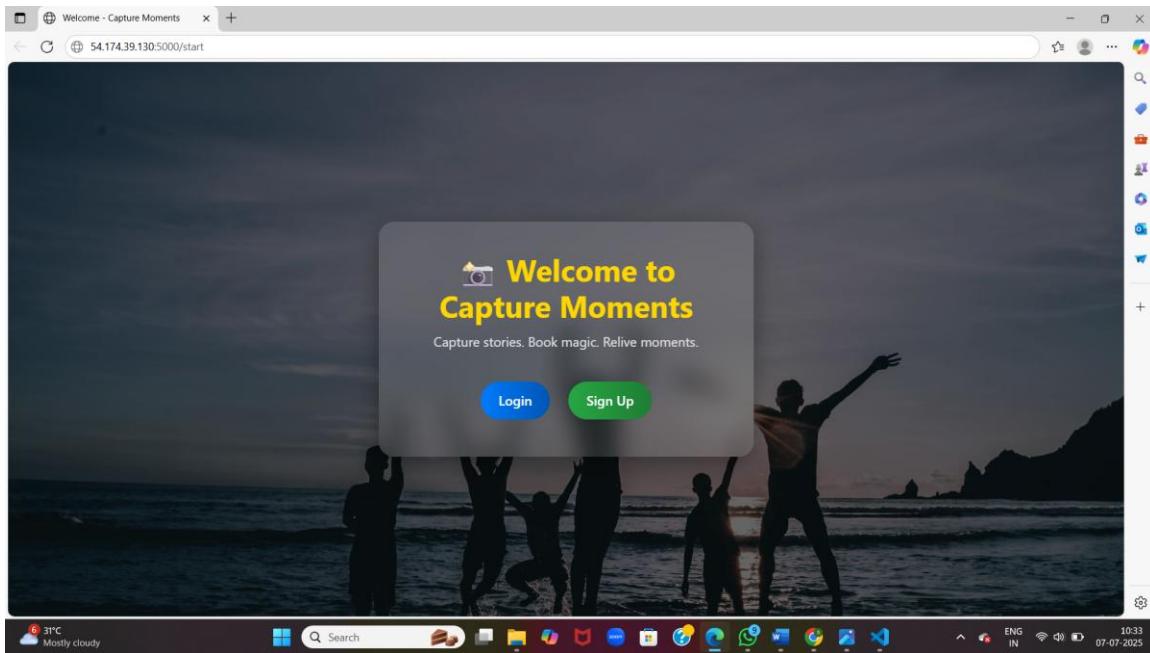
7 30°C Mostly cloudy ENG IN 2224 04-07-2025


```

```
git clone https://github.com/your-username/capture-moments.git  
cd capture-moments  
pip3 install -r requirements.txt
```

Milestone 5: Testing & Verification

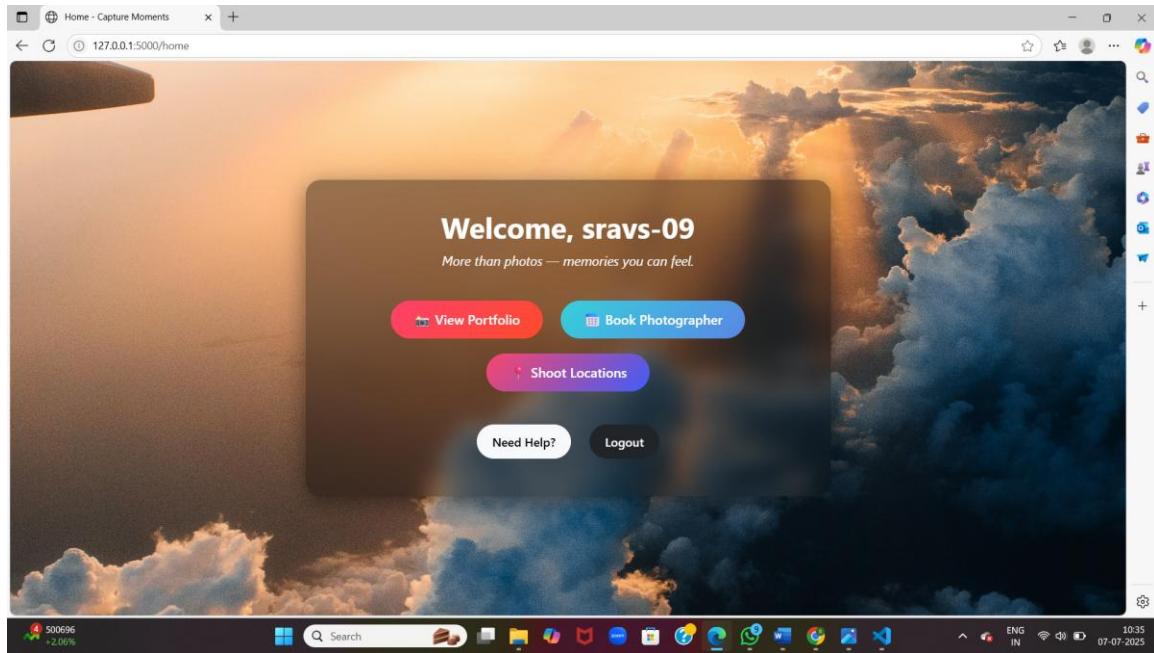
Test signup, login, forgot-password, book photographer, explore locations, and support features



Sample Pages

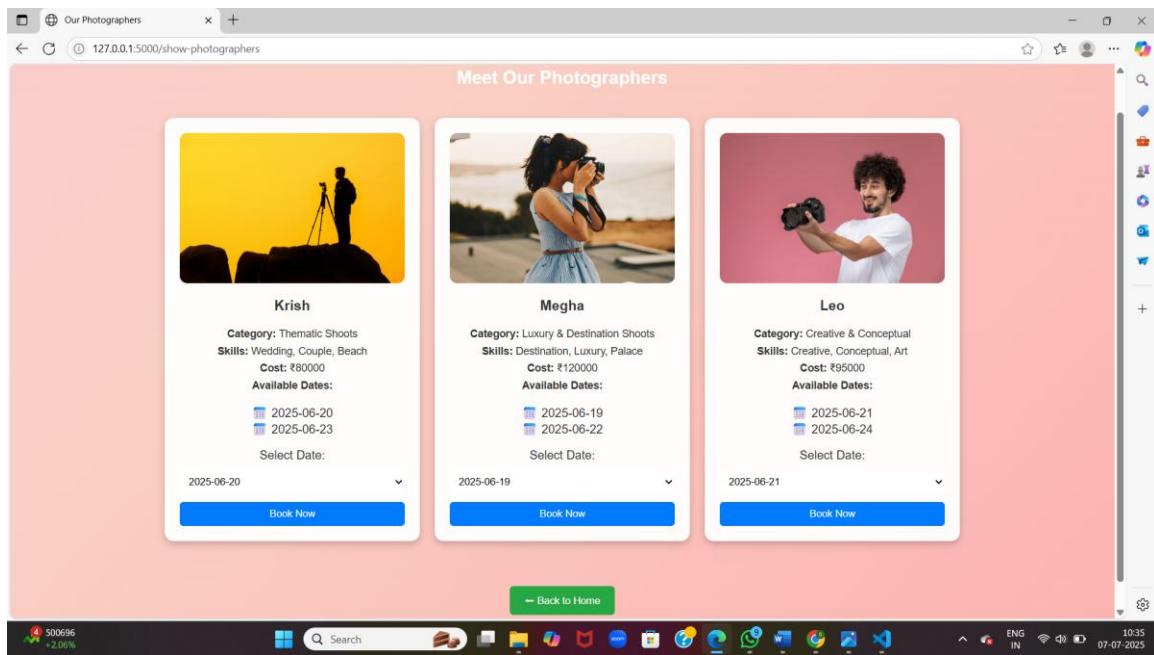
Home Page

Buttons: View Portfolio | Book Photographer | Explore Gallery



Photographer Cards

- Name
- Category
- Cost
- Availability Dates
- Book Now button



The screenshot shows a browser window titled "Our Photographers" with the URL "127.0.0.1:5000/show-photographers". The main heading is "Meet Our Photographers". Three cards are displayed, each featuring a photograph of a photographer and their details:

- Krish:** Category: Thematic Shoots; Skills: Wedding, Couple, Beach; Cost: ₹80000; Available Dates: 2025-06-20, 2025-06-23; Select Date: 2025-06-20; Book Now button.
- Megha:** Category: Luxury & Destination Shoots; Skills: Destination, Luxury, Palace; Cost: ₹120000; Available Dates: 2025-06-19, 2025-06-22; Select Date: 2025-06-19; Book Now button.
- Leo:** Category: Creative & Conceptual; Skills: Creative, Conceptual, Art; Cost: ₹95000; Available Dates: 2025-06-21, 2025-06-24; Select Date: 2025-06-21; Book Now button.

At the bottom of the page is a "Back to Home" button. The browser interface and taskbar are visible at the top and bottom of the screenshot respectively.

📍 Location Explorer

- Filter by shoot type
- Visual preview of location

The screenshot shows a web-based application titled "Explore Shoot Locations". It features a dark-themed interface with three main sections: "Thematic Shoots" and "Luxury & Destination Shoots".
Thematic Shoots:

- Golden Beach**: City: Puri, Odisha. Description: Soft sand and glowing horizons for seaside couple shoots.
- Couple's Hideout**: City: Lonavala. Description: Private hills for dreamy couple portraits.
- Temple Silhouettes**: City: Madurai. Description: Capture divinity and tradition in colorful temple architecture.

Luxury & Destination Shoots:

- Three blurred images representing luxury destination shoots.

🔒 Forgot Password

Innovative UI with:

- Glassmorphism + blurred background
- Form: Email/User ID, New Password

The screenshot shows a web-based customer support application titled "Customer Support". It features a dark-themed interface with a central message box.
Message Exchange:

- User Message: hi
- Reply from Admin: Thank you for contacting us! Our team will respond shortly.

Form Fields:

- Text area: Describe your issue...
- Blue "Submit" button

Navigation:

- "Back to Home" button

Background: A blurred background image of people silhouetted against a sunset or sunrise over water.

Conclusion

Capture Moments uses a modern cloud-first design to streamline booking and photography services. By integrating AWS technologies and intuitive design, the platform enables:

- Effortless user experiences
- Efficient admin operations
- High availability and reliability

This project showcases the power of cloud computing and Python in transforming traditional photography services into a seamless digital platform.

A Special Thank You

I would like to express my sincere gratitude to my **mentors** for their invaluable **guidance, encouragement, and support** throughout this journey. Your mentorship has been the backbone of this project's success.

- With heartfelt thanks, Lakshmi Sravya 