

Cloud based Personalized Weather App

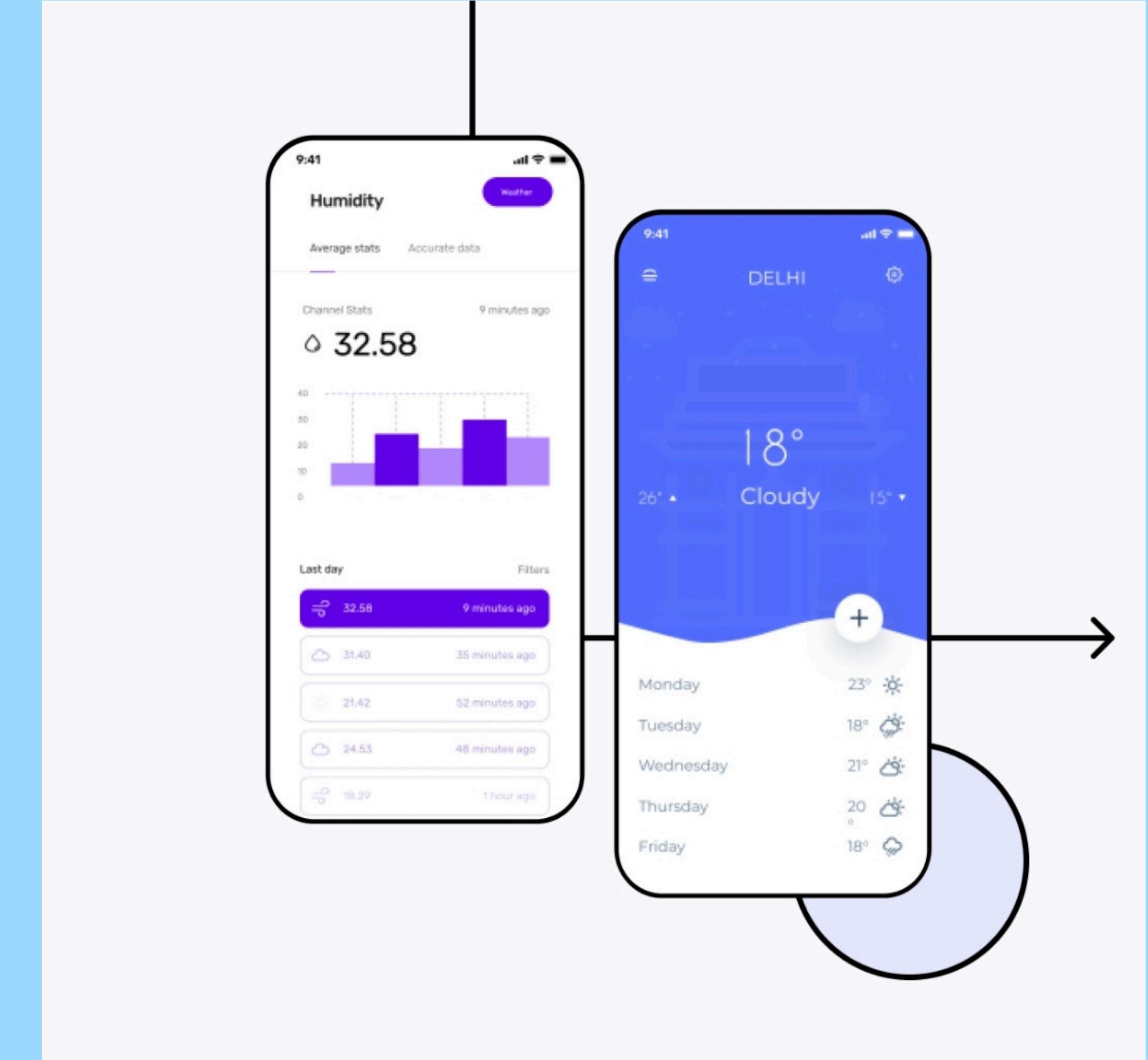
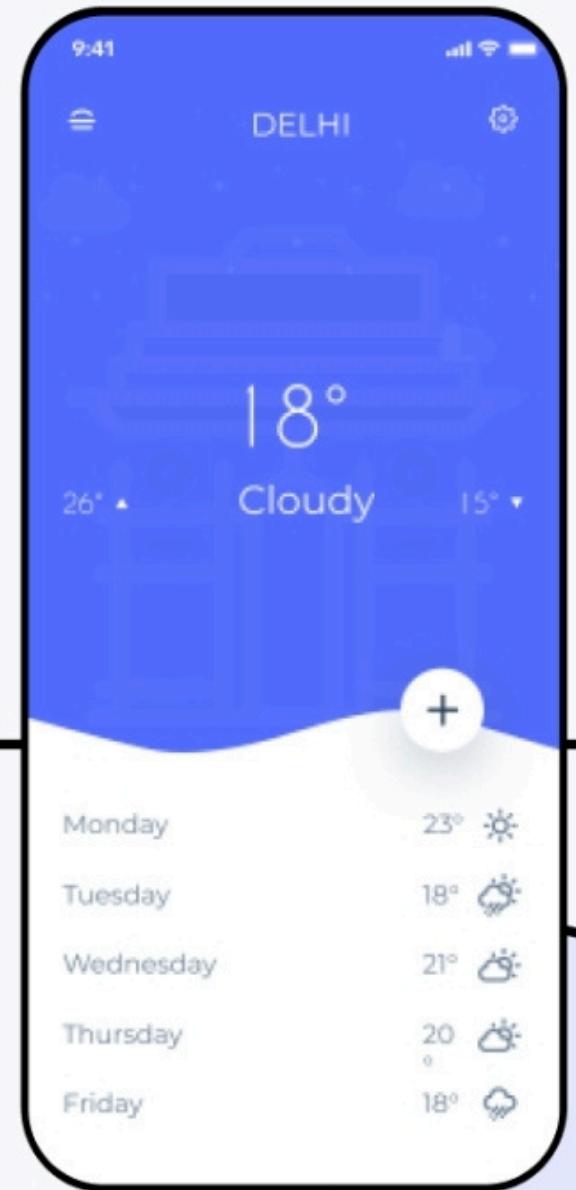
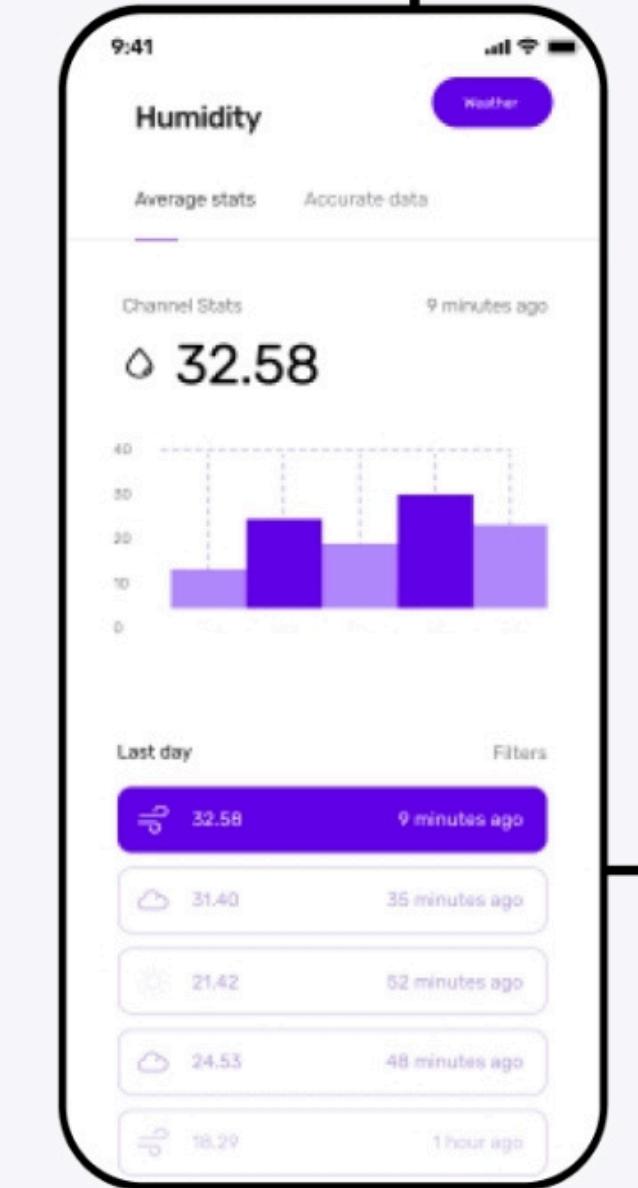
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**Presented to:-
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Introducing Your Weather App

A cloud-based personalized weather app delivers real-time, tailored weather forecasts. It uses cloud technology for accuracy, scalability, and global reach. Users can customize alerts, units, and locations. Key features include maps, history, and integration with other devices.

Overall, a cloud-based personalized weather app aims to provide users with a valuable tool for staying informed, planning their activities, and making informed decisions based on weather conditions.



Key Features

Accurate and Real-Time Forecasts

Personalized Weather Experience

Intuitive User Interface

Essential Weather Alerts

Weather history and app

Objectives

Scalability and Elasticity

Cost-Efficiency

Reliability and High Availability

Global Reach and Data Centers

Integration with Weather Data Providers

Security and Compliance

Caching frequently accessed weather data



Why, this ??

This project offers a chance to create a valuable and practical tool that can improve people's daily lives by providing personalized, real-time weather information. It's an excellent opportunity to develop your skills in technology and contribute to a meaningful solution.

Beneficiaries

INDIVIDUALS

- Outdoor enthusiasts
- Commuters
- Farmers

BUSINESSES

- Retailers
- Event planners
- Construction companies
- Energy companies

OTHERS

- Healthcare
- Insurance
- Tourism
- Sports

AWS: A Brief Overview



Amazon Web Services (AWS) is a subsidiary of Amazon that provides on-demand cloud computing platforms and APIs to individuals, companies,

and governments. It offers a wide range of services, from computing power and storage to database management and machine learning



Why, AWS?

MATURITY AND MARKET LEADERSHIP:

- Largest Market Share
- Extensive Service Offerings

STRONG DEVELOPER COMMUNITY AND ECOSYSTEM:

- Active Community
- Third-Party Integrations

COMPREHENSIVE SECURITY AND COMPLIANCE:

- Robust Security Features
- Compliance Certifications

GLOBAL REACH AND SCALABILITY:

- Global Infrastructure
- Scalability

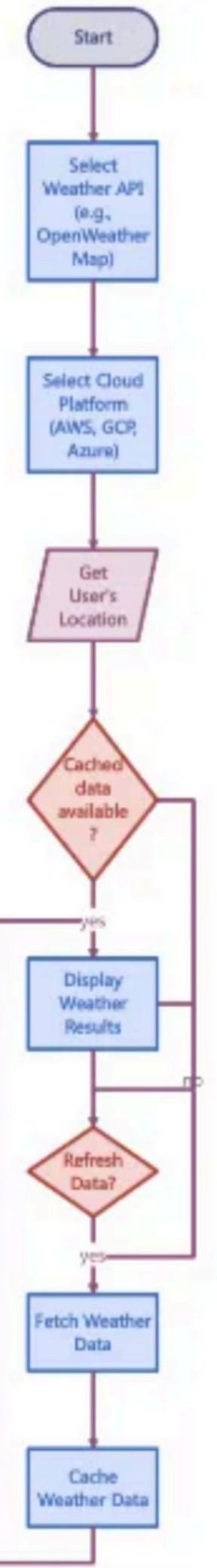
COST-EFFECTIVE PRICING MODELS:

- Pay-As-You-Go
- Reserved Instances

STRONG INTEGRATION WITH OTHER AWS SERVICES:

- Synergy
- Cost Savings

Flow- chart



AWS Services

- Amazon Simple Storage Service (S3): To store user data, weather data, and application code.
- Amazon Elastic Compute Cloud (EC2): To run the application servers that process user requests and retrieve weather data.
- Amazon Relational Database Service (RDS): To store user preferences and other application data.
- Amazon DynamoDB: A NoSQL database that can be used to store large amounts of unstructured data, such as weather data.
- Amazon API Gateway: To expose the application's APIs to users.
- Amazon Lambda: To run serverless functions that can be triggered by events, such as user requests or changes to data.
- Amazon Simple Notification Service (SNS): To send notifications to users about weather updates.
- Amazon Simple Queue Service (SQS): To decouple different components of the application and improve scalability.
- Amazon CloudFront: To cache weather data and improve performance for users.
- Amazon Location Service: To provide location-based services, such as determining the user's current location.

Security Measures

1. Data Encryption:

At Rest: Encrypt data stored on disk or in databases using strong encryption algorithms like AES-256.

In Transit: Use HTTPS (TLS) to encrypt data transmitted between the app and cloud services.

2. Access Controls:

IAM Roles and Policies: Implement granular access controls using AWS Identity and Access Management (IAM) to restrict permissions to specific resources and actions.

Authentication and Authorization: Use strong authentication methods like multi-factor authentication (MFA) and authorization mechanisms to ensure only authorized users can access the app and data.

3. Vulnerability Management:

Regular Patching: Keep operating systems, applications, and libraries up-to-date with the latest security patches.

Vulnerability Scanning: Conduct regular vulnerability scans to identify and address potential security weaknesses.

4. Network Security:

Security Groups: Use security groups to control inbound and outbound traffic to EC2 instances and other resources.

VPN: Implement a virtual private network (VPN) to securely connect to the cloud environment.

5. Data Loss Prevention (DLP):

Data Classification: Classify data based on sensitivity and implement appropriate protection measures.

Data Loss Prevention Tools: Use DLP tools to detect and prevent unauthorized data exfiltration.

6. Logging and Monitoring:

CloudTrail: Enable CloudTrail to log API calls made to your AWS account, providing visibility into user activity and potential security threats.

Monitoring Tools: Use monitoring tools to track resource usage, detect anomalies, and identify potential security incidents.

7. Incident Response Plan:

Preparedness: Develop a comprehensive incident response plan to address security breaches and data leaks effectively.

Testing: Regularly test the incident response plan to ensure it is effective and up-to-date.

8. Compliance:

Adhere to Regulations: Ensure compliance with relevant data privacy regulations like GDPR, CCPA, and HIPAA.

Third-Party Audits: Conduct regular audits to verify compliance and identify areas for improvement.

Summary

IaaS (Infrastructure as a Service):

- EC2 instances: To host the application's servers and run the necessary computations.
- Storage services (S3, EBS): To store weather data, user preferences, and application logs.
- Networking services (VPC, VPC Peering): To connect EC2 instances and other resources within the cloud environment.

PaaS (Platform as a Service):

- Serverless computing (Lambda): To execute functions on-demand without managing servers, ideal for tasks like processing weather data or sending notifications.
- API Gateway: To expose the application's APIs and manage incoming requests.
- Managed databases (RDS, DynamoDB): To store structured and unstructured data, respectively.

SaaS (Software as a Service):

- Location-based services (Location Service): To determine the user's location and provide accurate weather forecasts.
- Notification services (SNS): To send alerts and notifications to users.
- Caching services (CloudFront): To improve performance by storing frequently accessed data closer to users.

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