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COLLEGE NAME: Amrita College of Engineering and Technology

DEPARTMENT: Artificial Intelligence and Data Science

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DATE : 22-09-2025

Completed the project named as Phase 3

TECHNOLOGY PROJECT NAME : Chat Application UI

SUBMITTED BY,

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Chat Application UI

MVP Implementation

A step-by-step guide for building your first chat app

Getting Started with MVP

What is MVP?

Minimum Viable Product - core features only

Fast deployment, user feedback, iterative improvement

Why Chat Apps?

Real-time communication essential

Scalable foundation for future features

Chat Application UI

Technology Stack & Setup

Frontend Options

React, Flutter, or Swift

Choose based on your target platform

Backend Services

Node.js/Express or Firebase

Firestore , MongoDB, or SQLite

Development Environment

VS Code or Android Studio

GitHub for version control

Initialize Project

create -react -app or framework command

Setup Folder Structure

/components, /assets, /services, /   api

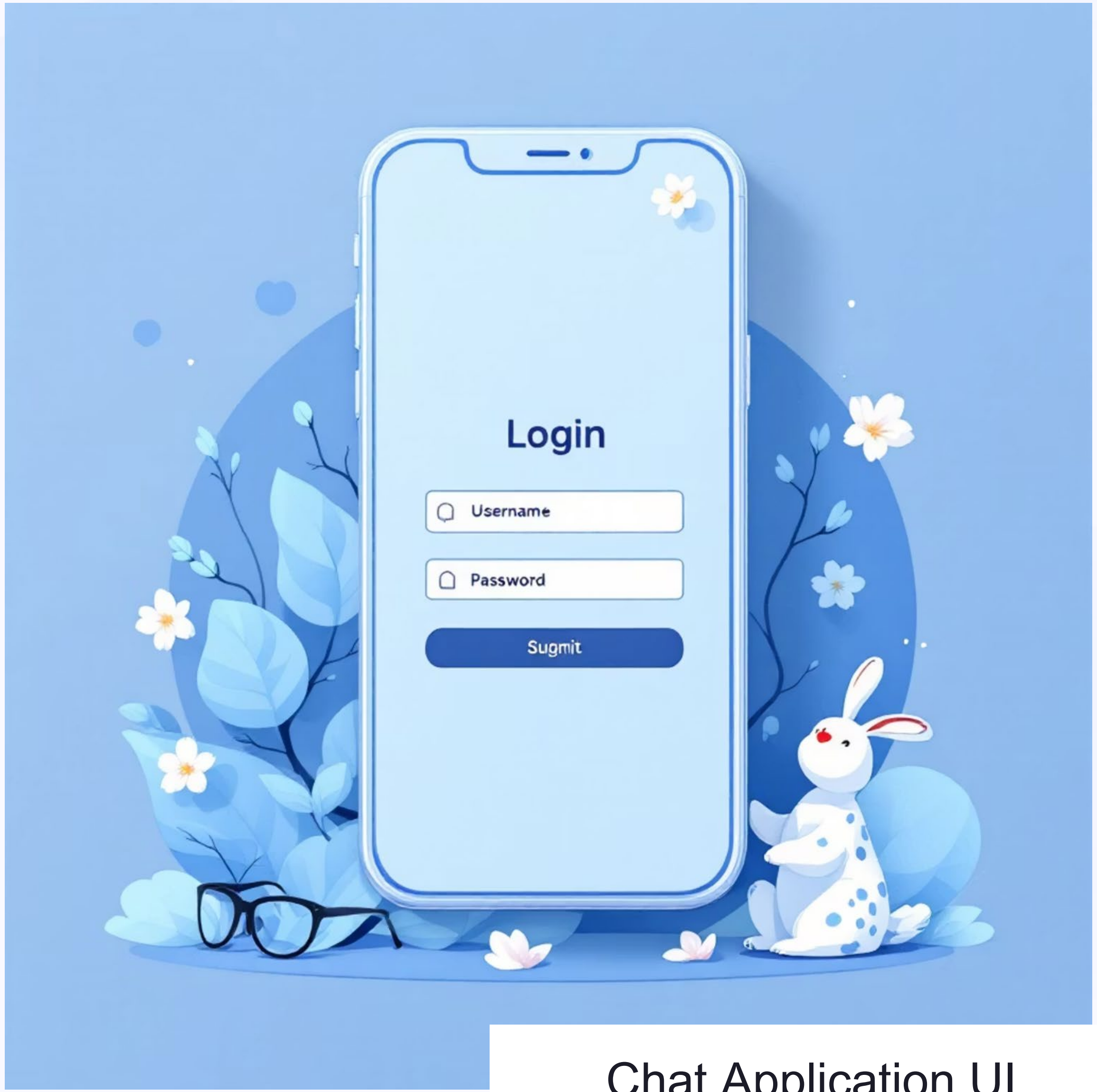
Core Features: Authentication & UI

User Authentication

- Email, social media, or anonymous login
- Firebase Auth or JWT tokens
- Secure session management

UI Design Principles

- Clean, intuitive interface
- Message bubbles & input field
- Mobile -first responsive design



Chat Application UI

Real-Time Messaging & Storage

Real-Time Delivery

WebSockets or Firebase Realtime Database

Instant message delivery

Read receipts (optional)

Message Persistence

Local storage for offline access

Firebase or MongoDB backend

Message history sync

Notifications & Group Features

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Push Notifications

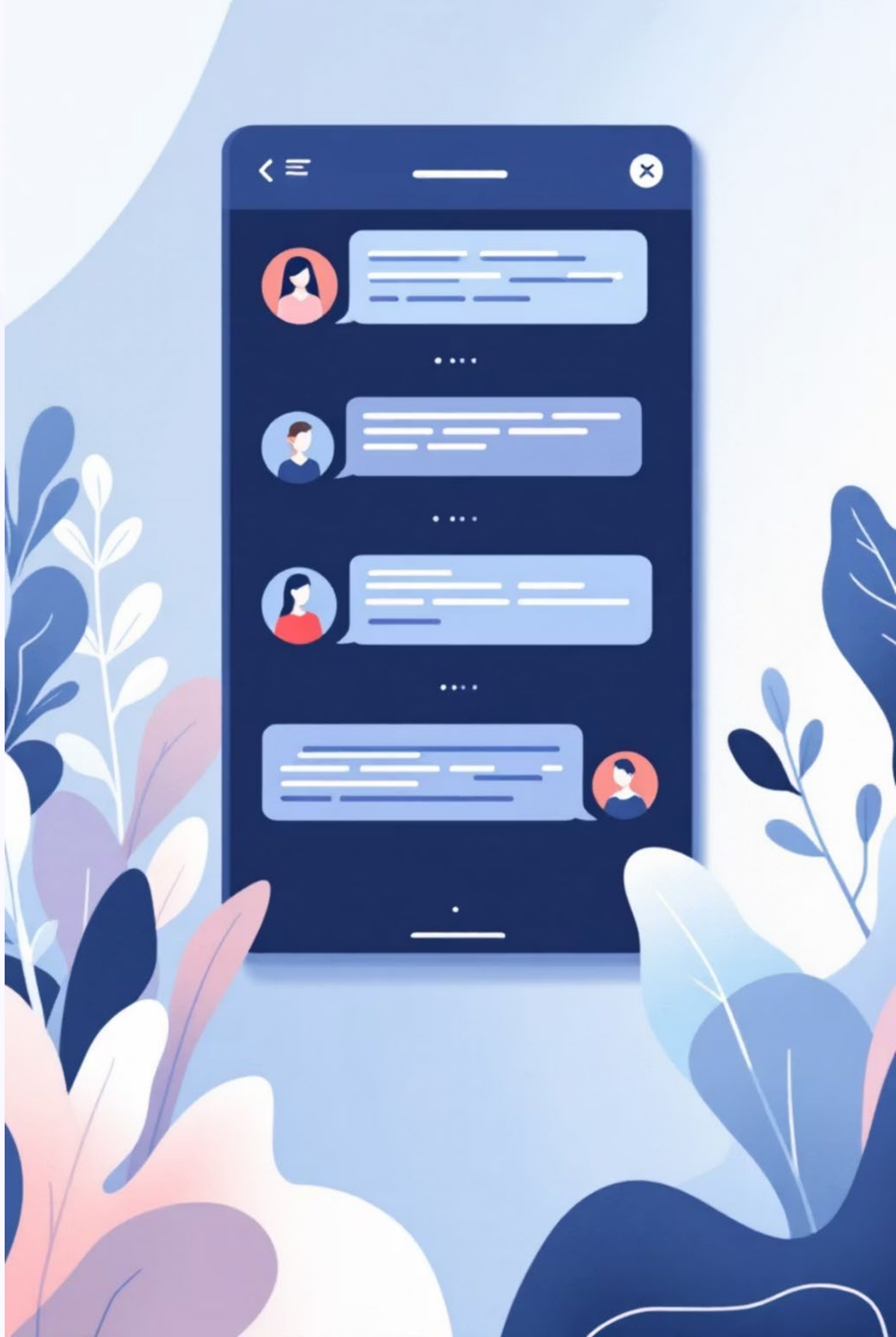
Background message alerts

Firebase Cloud Messaging (FCM)

Chat Rooms & Groups

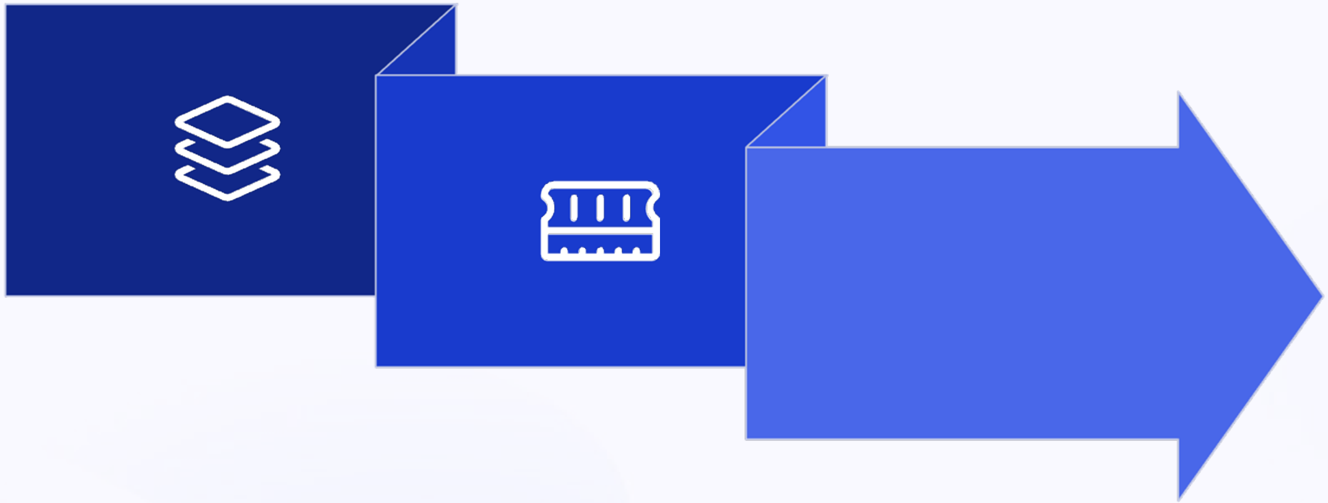
Create and manage group chats

Member roles and permissions



Data Management

Strategy



Context API / Redux

Firebase / MongoDB

Session Memory

Chat Application UI

Testing Your Chat App

1 Unit Testing

Jest for individual components

Test Message, ChatBubble, Login forms

Core logic: send/receive, authentication

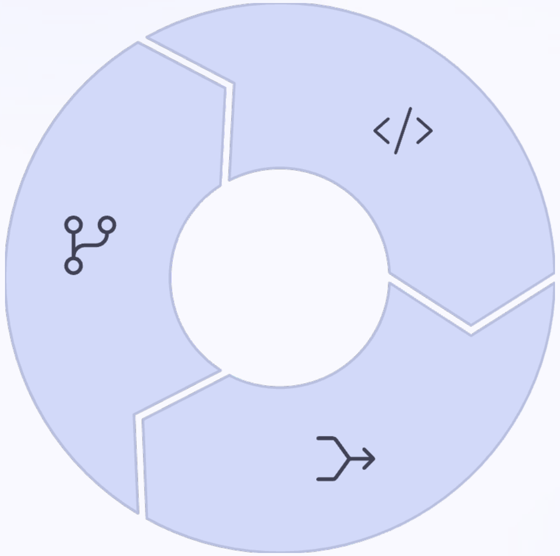
2 End-to-End Testing

Cypress for complete user flows

Login → send messages → notifications

Multi-device simulation

Version Control with GitHub



Master/Main Branch

Stable, production - ready code

Feature Branches

feature/chat - ui, feature/auth

Pull Requests

Code reviews and merging

Pro Tip: Commit often with meaningful messages like "Implemented message sending functionality"

You're Ready to Build!

5

Core Features

Authentication, messaging, storage, notifications, groups

3

Testing Phases

Unit tests, integration tests, end-to-end validation

1

MVP Goal

Functional chat app ready for user feedback

Start building, test thoroughly, iterate based on feedback