# ✅ Day 24 – Authentication Basics (Modern 2025)

## 🔐 What is Authentication?

Authentication means verifying **who the user is**.

Example: *Login system* → user enters email/password → we verify identity.

## ✅ Why Authentication?

* Secure user data
* Personalization (dashboards, profiles)
* Restrict access to certain pages
* Real‑world apps cannot exist without login

## ✅ Authentication vs Authorization

| Concept | Meaning | Example |
| --- | --- | --- |
| Authentication | Who are you? | Login |
| Authorization | What can you do? | Admin vs Normal user |

## 🔥 Modern Authentication Methods (2025)

| Method | Used For | Secure | Notes |
| --- | --- | --- | --- |
| JWT + HttpOnly Cookies | Full‑stack apps | ✅✅✅ | Recommended best practice |
| Auth services like Firebase/Auth0 | Fast login integration | ✅✅✅ | No backend required |
| Tokens in LocalStorage | Dev/testing | ❌ | Vulnerable to XSS |

✅ We start with **Mock Auth + Context + Protected Routes** → THEN real backend.

# ✅ Authentication Flow in React

1️⃣ User enters login info 2️⃣ Validate → authenticate 3️⃣ Store user data in **Context** (global state) 4️⃣ Protect private pages → redirect if not logged in

# 🧠 Tools We Use

✔ React Router → protected navigation ✔ Context API → global auth state ✔ useNavigate() → redirect after login

## ✅ AuthContext Structure

* Holds user data
* Login function
* Logout function
* Shared across app

## ✅ Protected Routes (PrivateRoute Component)

Block pages unless user logged in.

Example pages protected: ✅ Dashboard ✅ Profile ✅ Settings

# ✅ Project Structure

src/  
│  
├─ AuthContext/  
│ └─ AuthProvider.jsx ✅  
│  
├─ Pages/  
│ ├─ Login.jsx  
│ ├─ Dashboard.jsx  
│ └─ Profile.jsx  
│  
└─ PrivateRoute.jsx ✅

# ✅ Day 24 – Mini Project Requirements

### 🔐 Secure Dashboard App

✔ Login Page with validation ✔ Dashboard (ONLY if logged‑in) ✔ Logout button ✔ Save user in context ✔ useNavigate for redirection ✔ Tailwind/MUI styling recommended

**Credentials for mock test:**

email: admin@gmail.com  
password: 123456

### 📌 Bonus Challenges

✅ Add Profile Page ✅ Show logged‑in user’s email ✅ Redirect user to login after logout ✅ Prevent back‑button access after logout

## 🎯 What You Will Learn

* Real authentication architecture
* Secure route protection
* Global state for auth
* Redirect behavior in React

📌 After you finish ✅ Share your code → I will review like a senior dev 😎