# React JS - First Class Notes

## 📘 Overview

- Google ne apna framework banaya jiska naam tha Angular.  
  
- Facebook ne apni library banayi jiska naam tha React JS.  
  
- Vue JS banaya tha Evan You ne.

## ❓ Facebook ne React kyun banaya?

Facebook ne React is liye banaya kyun ke jab applications pure JavaScript mein banti thi to developers ko kuch bade problems face karne parte the:

**1. Maintainability:**   
  
Jab project bara hota jata hai to code ko samajhna aur update karna mushkil ho jata hai agar structure clear na ho.  
  
**2. Scalability:**  
   
Pure JavaScript mein large-scale applications banana mushkil hota hai — naye features add karna ya modules ko divide karna problematic ho jata hai.  
  
**3. Team Collaboration:**  
Agar sab kuch ek hi file mein ho to team members ka code clash karta hai. React ka component-based system is problem ko solve karta hai.  
  
**4. Code Security & Clean Structure:**  
Agar code separate aur clean na ho to bugs aur security issues zyada hotay hain. React predefined structure follow karta hai jo secure coding mein madad karta hai.

## 🔍 Additional Notes

- React aik JavaScript library hai jo mostly UI (User Interface) banane ke liye use hoti hai.  
  
- Isme JavaScript ke tamam features hotay hain kyun ke ye JavaScript par based hai.  
  
- React mein component-based system hota hai jisme code choti choti files/components mein likha jata hai.  
- Ye code ko reusable, testable, aur manageable banata hai.  
  
- Agar aapke paas 10–15 saal ka experience ho to aap plain JS mein enterprise apps bana saktay ho, warna React / Angular / Vue jese tools best hain.

## ✅ React seekhne se pehle kya aana chahiye

1. Array 🡪 intermediate knwoledge  
2. Object 🡪 intermediate knwoledge  
3. let, var, const  
4. Loop (for, while, etc.)  
5. Conditionals (if/else, switch, ternary)  
6. Local Storage / Session Storage  
7. Rest Api   
8. Async / Await --- Try / Catch  
9. Event  
10. Dom

## 📚 Framework vs Library

- Angular (Framework):  
  
 Isme strict boundaries hoti hain. Agar aap structure follow nahi karte to error milta hai.  
  
- React (Library):  
  
Zyada flexible hoti hai. Aap apne tareeqe se kaam kar saktay ho lekin kuch basic rules follow karne parte hain.

## ⚠️ React ke Issues

1. Ye by default SEO friendly nahi hoti.  
2. Backend aur frontend ka code mixup ho jata hai.

## ✅ Next.js ka Solution

1. Ye SEO friendly hota hai.  
2. Isme frontend (React) aur backend (Node.js) dono ka code saath likh saktay ho.

## 🌐 Angular aur Vue mein SEO kaise hota hai

- Angular: SEO ke liye Angular Universal use karta ha ya SSR (SSR - server side rendering ke zariye) use hota hai.  
  
- Vue: SEO ke liye Nuxt.js use hota hai.

## 🔁 React vs Next.js

| Feature | React | Next.js  
|---------------------|--------------------------------------|----------------------------------------  
| SEO | ❌ SEO friendly nahi | ✅ SEO friendly (SSR support)  
  
| Backend Support | ❌ Built-in backend nahi | ✅ API routes built-in hain |  
  
| Routing | ❌ Manual routing (react-router-dom) | ✅ File-based built-in routing  
  
| Flexibility | ✅ Flexible hai | ✅ Full-stack support ke sath flexible |

## 📊 Angular vs React vs Vue

| Feature | Angular (Google) | React (Facebook) | Vue (Evan You) |  
|----------------|---------------------------|-------------------------|-------------------------|  
  
| Type | Framework | Library | Framework |  
  
| Boundaries | Strict | Flexible | Flexible |  
  
| SEO | Angular Universal / SSR | SEO friendly nahi (Next js) | Nuxt.js SEO ke liye |  
  
| Use Case | Large applications | UI banane ke liye | Medium size apps |