

Introduction to React JS

(Day-1)

React JS is a JavaScript library for building websites and apps.

Helps make web pages fast and interactive.

Developed by Facebook, now Open-Source.

Focuses on building components (reusable parts of UI).

History of React JS

Created in 2011 by Jordan Walker at Facebook.

Released publicly in 2013.

Gained popularity due to:

- Simplicity.
- Speed.
- Component architecture.

features of React JS

- Component - Based : reusable UI pieces.
- Virtual DOM : fast updates by changing Only what's needed.
- One-Way Data Flow : Data moves from parent → child.
- JSX (JavaScript XML) : Write HTML inside JavaScript.
- React Hooks : Add state & lifecycle features in functions.

Advantages of React JS

- Reusable Components = Save development time.
- fast Rendering using Virtual Dom.
- Large Community = Tutorials, tools, support.
- SEO friendly with server-side rendering.
- Easy to Learn if you know Javascript.

Array

- Array is like a list that holds multiple values.
- Each item in the array has a position, starting from 0.
- Creating Arrays using Literal and Constructor.

• Const cities = ['Delhi', 'Mumbai', 'Chennai', 'Kolkata'];
 • Const numbers = new Array(10, 20, 30, 40);

Accessing & Changing Elements

- Access : cities[0]; → 'Delhi'
- Change : cities[2]; → 'Bangalore'

Common Array Methods

- push(), pop(), shift(), unshift(), length.

Array Iteration Methods

- map(), filter(), reduce(), find(), includes(), join(), sort(), reverse(), findIndex().

Looping through an array.

- ① for Loop
- ② for-of Loop.
- ③ forEach () Loop.
- ④ for-in Loop.

Objects in JavaScript

- Objects are collections of key-value pairs.
- keys are strings; → values can be any data type.

Creating Objects.

- Using Literal:

```
const person = {  
    name: 'Rajesh',  
    age: 28  
}
```

- Using Constructor:

```
const student = new Object();
```

Accessing & Modifying Object Properties.

- Dot ← Access
`person.name.`
- Bracket : ← Access.
`person['city']`
- Modify :
`person.age = 29;`

Object Methods

① Object.keys() :

```
let person = { name: 'Amit', age: 25 }
```

```
console.log(Object.keys(person));
```

↳ Output: ['name', 'age'].

② Object.values()

```
let person = { name: 'Amit', age: 25 },
```

```
console.log(Object.values(person));
```

↳ Output: ['Amit', 25]

③ Object.entries() :

let person = { name: 'Amit', age: 25 };

console.log(Object.entries(person));

→ Output: [['name', 'Amit'], ['age', 25]]

④ Object.assign() :

↳ Object ko merge karta hai aur new Object banata hai.

let obj1 = { name: 'Amit' };

let obj2 = { age: 25 };

let merged = Object.assign({}, obj1, obj2);

console.log(merged);

Output: { name: 'Amit', age: 25 }.

⑤ Object.freeze():

↳ Object ko freeze kar deta hai → iska matlab object ko ab modify nahi kya ja skta.
like: is add, delete, update.

```
let person = { name: 'Amet' };
```

```
Object.freeze(person);
```

```
person.name = 'Pawar'; → No change.
```

```
person.city = 'Delhi'; → Not add.
```

```
console.log(person);
```

(Output: { name: 'Amet' })

Array v/s Object

- Array: Ordered list, access by index.
- Object: key-value collection, access by key.
- Use Arrays for lists, Objects for structured data.