

## Lists and Keys

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**Question 1:** How do you render a list of items in React? Why is it important to use keys when rendering lists?

**Ans.**

1. How do you render a list of items in React?

In React, you usually render lists using the `map()` method.

```
const fruits = ["Apple", "Banana", "Mango"];
```

```
function FruitList() {  
  return (  
    <ul>  
      {fruits.map((fruit, index) => (  
        <li key={index}>{fruit}</li>  
      ))}  
    </ul>  
  );  
}
```

**What's happening here?**

- `fruits.map()` loops through the array
- For each item, it returns a JSX element
- React renders all returned elements as a list

## 2. Why is it important to use keys when rendering lists?

Keys help React identify which items have changed, been added, or removed.

In simple words:

Keys act like unique IDs for list items.

## 3. What problems do keys solve?

Without keys:

- React may re-render the entire list
- UI bugs can occur (wrong item updates)
- Performance becomes worse

With keys:

- React updates only the changed item
- Better performance
- Correct UI updates

## 4. Example with a good key

```
const users = [  
  { id: 1, name: "Uday" },  
  { id: 2, name: "Amit" },  
];
```

```
function UserList() {  
  return (  
    <ul>
```

```
{users.map(user => (  
  <li key={user.id}>{user.name}</li>  
))}  
</ul>  
  
);  
}
```

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**Question 2:** What are keys in React, and what happens if you do not provide a unique key ?

**Ans.**

What are keys in React?

Keys are special attributes used by React to uniquely identify elements in a list.

They help React understand:

- Which item is added
- Which item is removed
- Which item is updated

```
{items.map(item => (  
  <li key={item.id}>{item.name}</li>  
))}
```

## 2. Inefficient re-rendering (Performance issue)

Without keys, React:

- Can't track items properly
- May re-render the entire list instead of only changed items

Result → slower UI

## 3. Wrong UI behavior (Serious bug)

If keys are missing or not unique:

- Input values may jump to other rows
  - Wrong items may update
  - Animations may break
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