

# REACT

What is react? is it library or just Framework

Library vs. Framework: Key Differences

Feature	Library 🏛	Framework 🏭
Definition	A collection of reusable functions and tools	A complete structure that dictates how to build an application
Control	You control how and when to use it	The framework controls the flow, and you follow its rules
Flexibility	Highly flexible, use as needed	Less flexible, enforces a structure
Code Inversion	You call the library functions	The framework calls your code (Inversion of Control)
Examples	React, Lodash, jQuery, D3.js	Angular, Next.js, Django, Ruby on Rails

React is a **JavaScript library**, not a framework.

## Why People Think It's a Framework

- React alone is a UI library, but when combined with tools like **React Router**, **Redux**, and **Next.js**, it behaves like a full-fledged framework.

## The Key Concept: "Inversion of Control"

- In a **library**, you are in control. You decide when and where to use the library functions.
- In a **framework**, the framework is in control. It provides structure and calls your code at the right time.

## RTK Query

**RTK Query** is a powerful data fetching and caching tool. It is designed to simplify common cases for loading data in a web application, **eliminating the need to hand-write data fetching & caching logic yourself**.

## Why Use RTK Query?

- **Automatic Caching & Re-fetching** → No need to manually store API responses.
- **Efficient API Calls** → Avoid unnecessary requests with built-in caching.

- **Optimistic Updates** → Improves UI responsiveness by assuming API success.
- **Auto Data Synchronization** → Keeps UI up-to-date with minimal effort.
- **Simplifies API Handling** → Reduces boilerplate code compared to Redux Thunk/Saga.