React by **Abbas Ghaith**

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- Developed and maintained by Facebook and Instagram
- A JavaScript library for creating user interfaces
- Serves as the view of MVC architecture
  Model View Controller
- Suitable for large web application which use data and change over the time without reloading the entire page
- React Native caters developing mobile application for various platform and React VR applications
- Aims at Speed, Simplicity and Scalability

Notable features

- One-Way data flow
  - o Single source of truth - Data is originated and kept in one place, data is immutable
  - o Data flow from the parent component to the child component
  - o Action flow from child component to parent component

- Virtual DOM - Document Object Model
  - o DOM manipulated is cost instead react create a virtual DOM tree and compare it with the rendered tree and update only what is changed
- JSX
  - o React JS language for defining user interfaces
  - o HTML like syntax
  - o Prevents cross-site scripting attacks by converting expressions to strings

Props and State

- Props are used to pass data and behavior from container components to child components
- Props are read only
- State is used to keep data which can be updated

- State is read write enabled
- Use setState({}) method to update state
- setStatemethod is asynchronous so, if you want to use state and props inside setStatemethod use the second form of the method
    setState((state,props)=>{})

Component life cycle

- React components extended from React. Component parent class inherit a set of methods that belong to react lifecycle
    - Render and commit State
    - Controlled and uncontrolled
    - Side effects
- constructor
- render
- componentDidMount
- getDerivedStateFromProps
- shouldComponentUpdate
- componentDidUpdate
- componentWillUnmount
- componentDidCatch

constructor

- JS constructor
- Declare state and bind context to life cycle events
- Do not call setState
- Always call super(props) to bind this.props

Render

- Rendering of the component
- Called every time state or props are getting changed
- Can return JSX, Portal, Fragments, Strings, Boolean etc

componentDidMount

- Fires after components is mount to DOM
- Can interact with DOM
- Ajax calls and update to the state

getDerivedStateFromProps

- Use this if you want to update your state from props
- React highly recommends not to use this

- Highly discourage conditionally setting state from props

shouldComponentUpdate

- To decide whether to update the component or not
- Only as a performance enhancement, if required

componentDidUpdate

- After component got updated
- Will not run if shouldComponentUpdate return false
- Use this to interact with DOM after a Component update

componentWillUnmount

- Before removing the component
- Should not call setState
- Clean up tasks

getDerivedStateFromError/componentDidCatch

- After an error from decent component
- getDerivedStateFromError to get error related State
- componentDidCatch for logging and side effects

Babel

- Most popular JavaScript Transpiler
  Babel is a transpiler for JavaScript best known for its ability to turn ES6 (the next version of JavaScript) into code that runs in your browser (or on your server) today
- Convert JavaScript es6 features and beyond to latest compatible version
- Babel polyfillsare available to support new global objects. It uses core-jspolyfills
- So far Babel compatibility with new features has been one of the best
- Debugging enabled via source maps
- In built code optimization
- Supports JSX (XML like syntax extension) and FLOW (Static type checker)

Webpack

- Most famous module bundler
- Support for build system as well as module bundling
- Split code into multiple files
- Supports CommonJSand AMD
- Extend using loaders (transpiling, csstransformation, image, optimization)
- Supports production optimizations (minification, uglification)
- Easy configuration with 4 steps - entry -> loaders -> plugins -> output
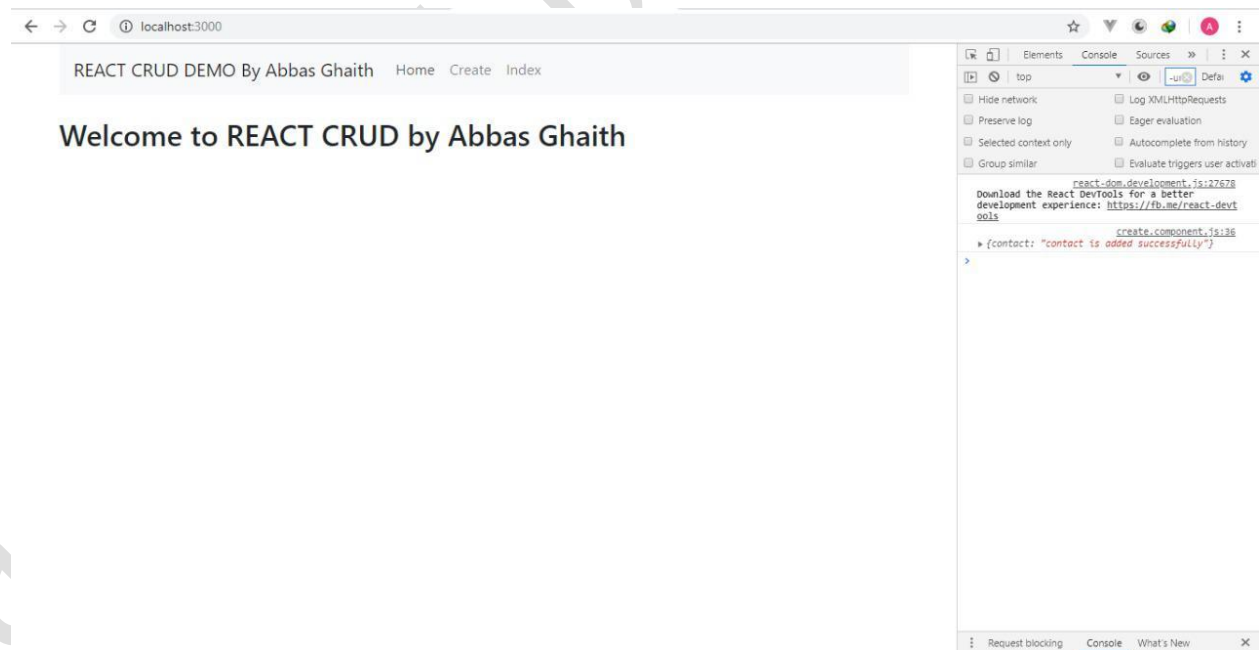
Parcel

- Fastest module bundler
- Relatively new to community
- Conventions over configurations
- Support JSX, SCSS, LESS, SVG, TypeScript etc
- Plugins available for extension and plugins are automatically detected

MERN Stack tutorial Technologies

- Node
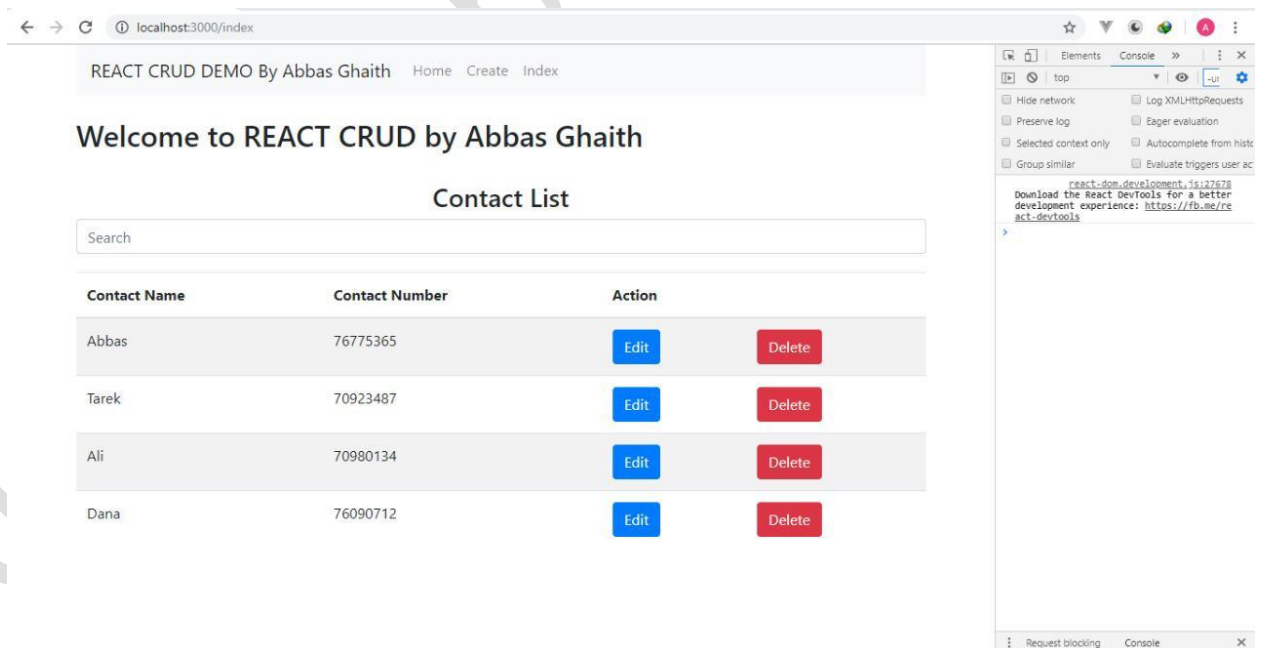- NPM
- MongoDB
- ReactJS
- Express
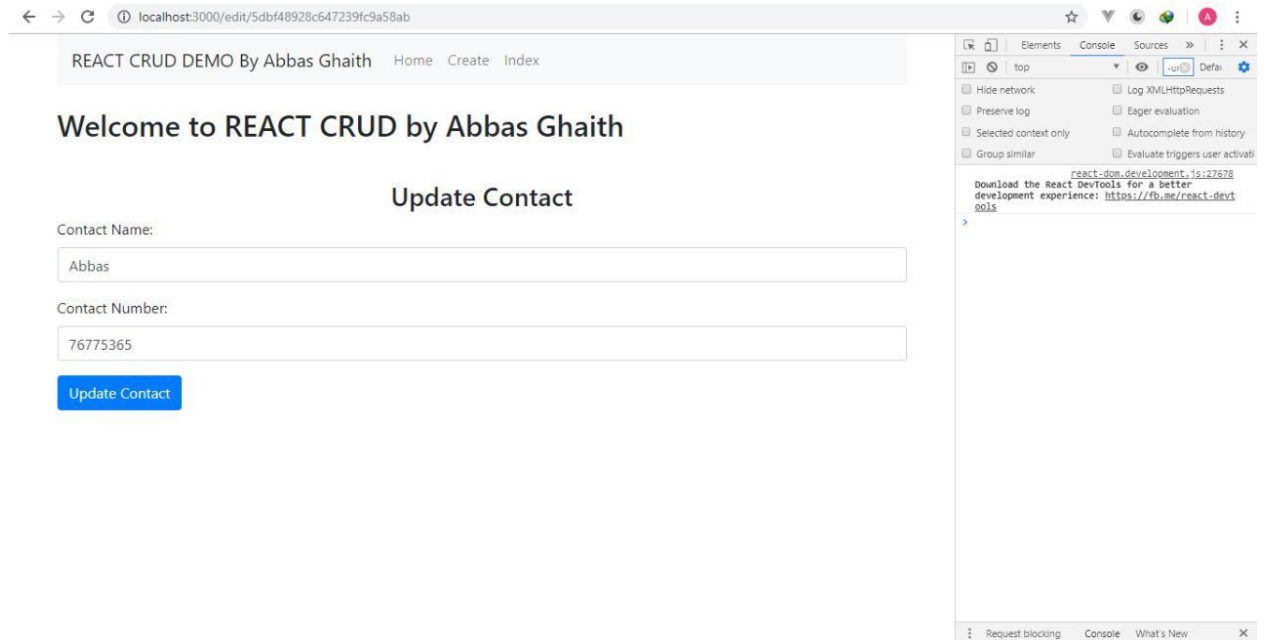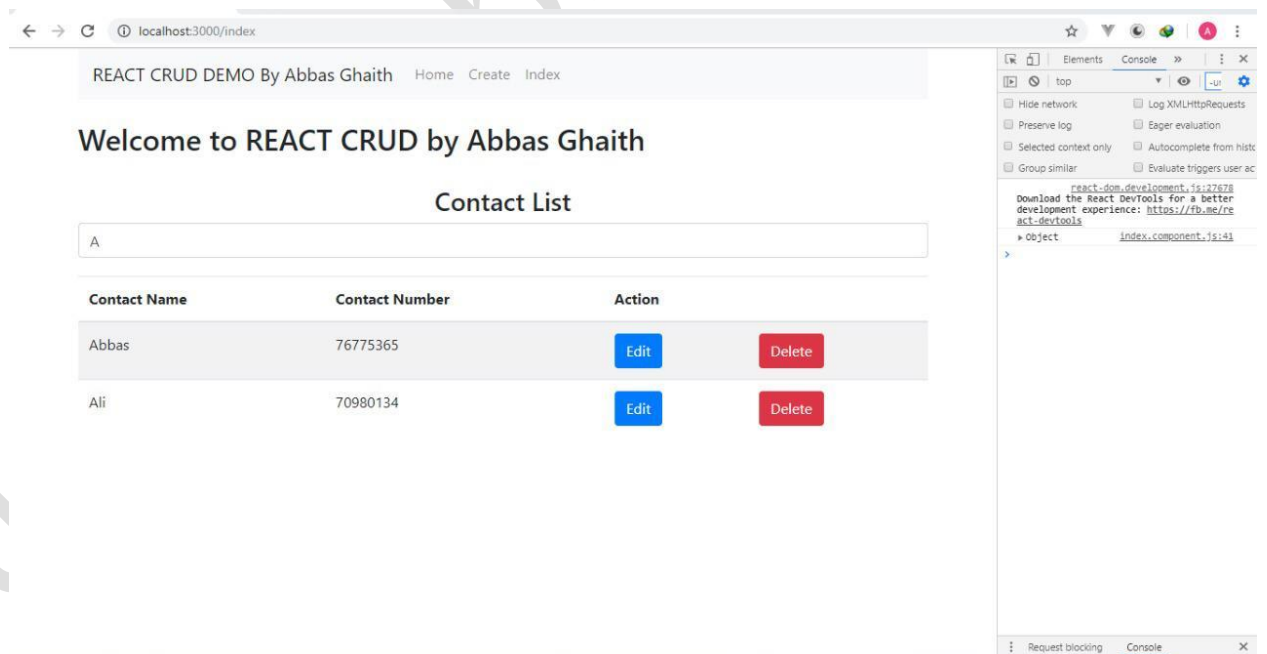
React CRUD by Abbas Ghaith

1. Welcome

2. Add

3. Display

4. Update

5. Search

6. Delete