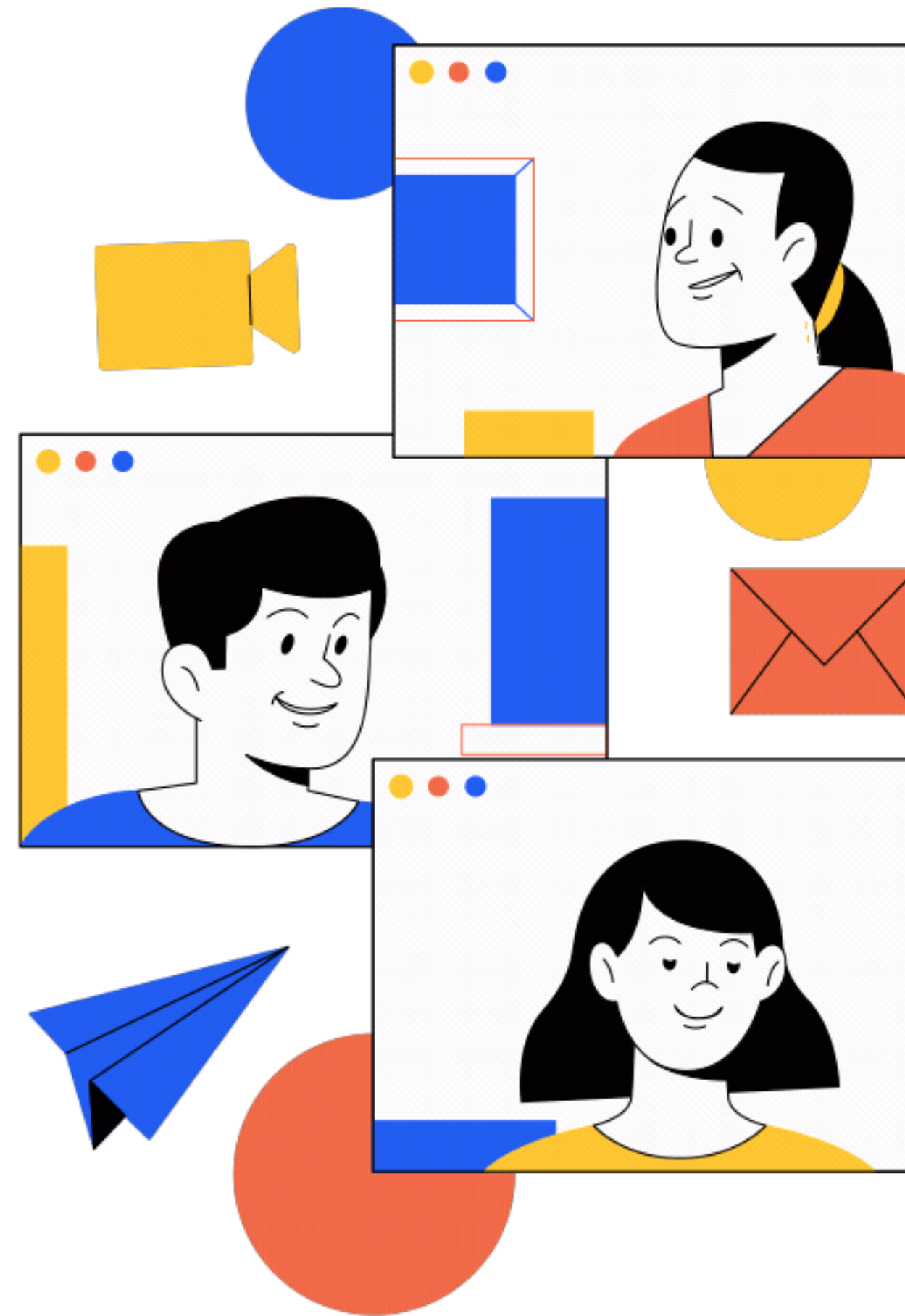UDACITY

Week 3 – React Dev. Cross-Skilling ND

Brace yourself! We're going to travel through new pages ✈

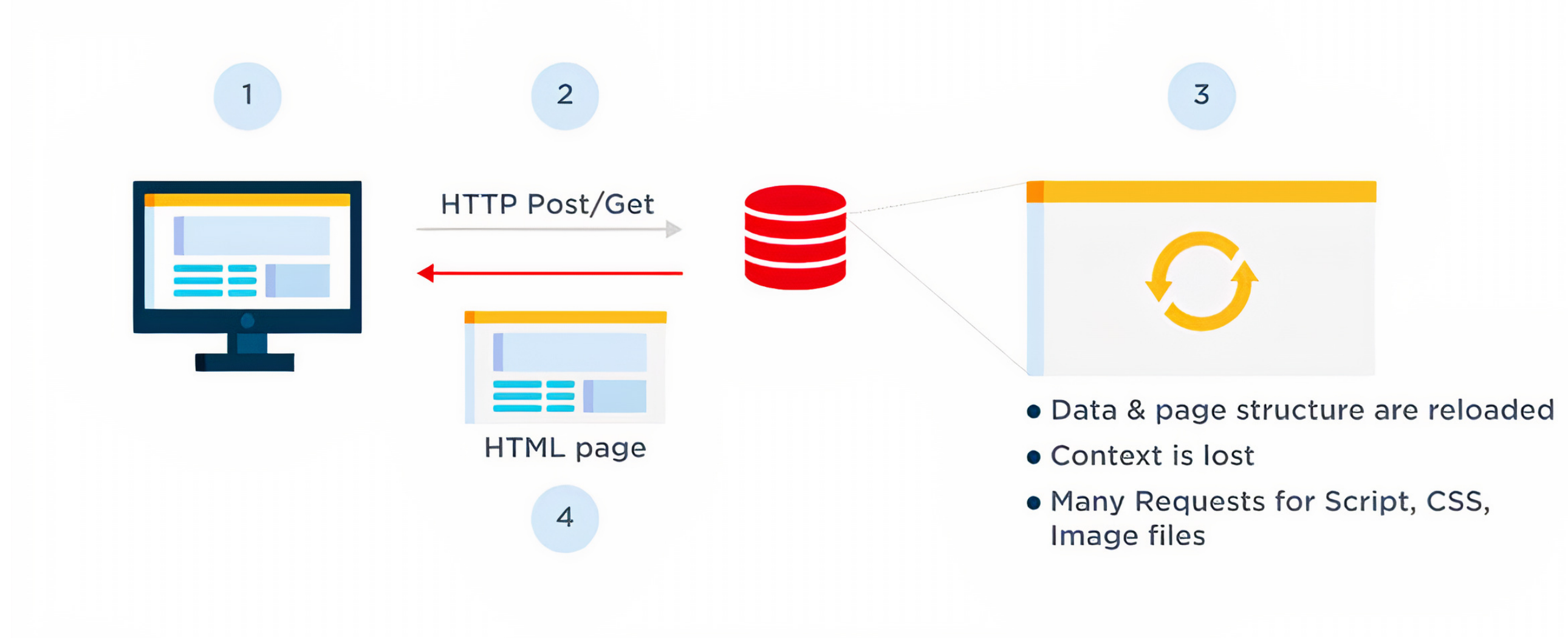**Ahmed Abdelbakey Ghonem**

React Session Lead

Agenda

What we'll cover in this session

- Multi-Page Application (MPA)

- Single-Page Application (SPA)

- SPA vs MPA

- What is React Router?
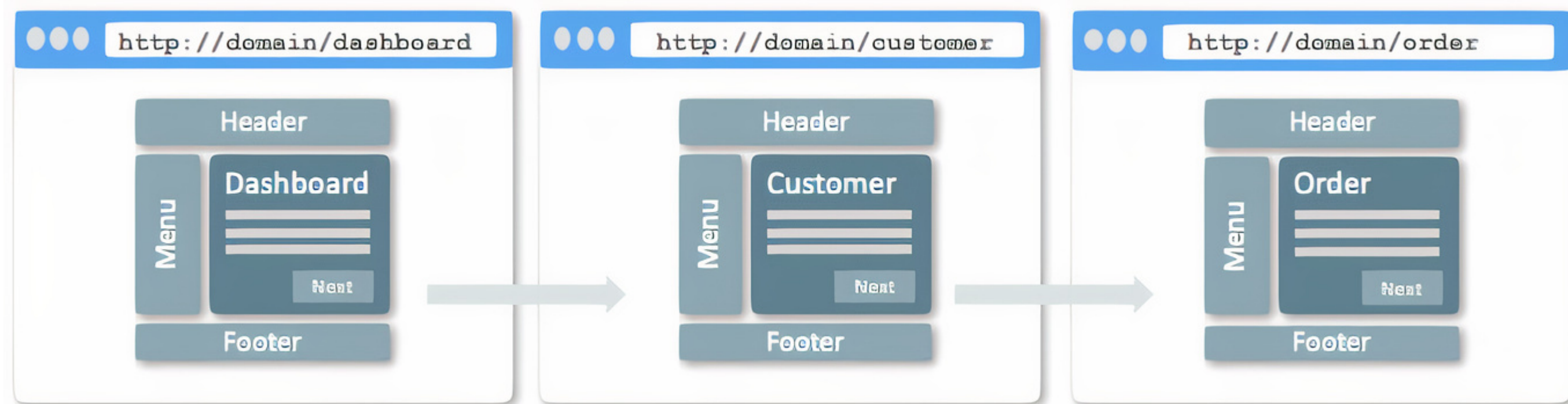
- React Router Main Component

- Live Demo

Multi-Page Application (MPA)

- A Multi-page Application is a web application consisting of a large number of pages completely refreshed every time when data changes on them.
- On Navigation, A whole new page is loaded from the server.
- *Examples:* Amazon, W3Schools

HTTP Post/Get

HTML page

- Data & page structure are reloaded
- Context is lost
- Many Requests for Script, CSS, Image files

Single-Page Application (SPA)

- SPA is a famous type of web app where everything is loaded on start and Asynchronous JS files (that holds the data) are loaded on need.
- The main content is loaded once, And data is then transmitted back and forth.
- Does not require page reloading on navigation .
- **Examples:** Twitter

MPA

- ✅ FAST on first render
- ✅ Better for SEO
- ✅ Ease of Scaling
- ✖ Reloads on navigation
- ✖ Frontend and Backend are tightly couples

SPA

- ✅ SPA is FAST on navigating
- ✅ Improved UX
- ✅ Data Caching
- ✖ Large first rendering time

React Router ✈

- **React Router** is a collection of *navigational components* (Library) that allows you to dynamically render pages on your website based on the current URL.

- React Router converts your React application into a Single-Page Application (SPA).

React Router Main Components

React router has 4 different main components: **BrowserRouter**, **Link**, **Route**, and **Switch (Routes)**

- **<BrowserRouter>** is a Router components that wraps the whole applications and provide routing history and other functionalities and keeps your screen in sync with the URL.
- **<Link>** Renders a navigation link (anchor tag) that receives a url (as a prop) to redirect to on click.
- **<Route>** Renders a UI component depending on the current URL
- **<Switch>** Makes sure that only one component is rendered and no more (Looks for the first match) in the routes,

WARNING: Components names have changed since react-router-dom-v6

React Router in Action

```
1  import React from 'react';
2  import ReactDOM from 'react-dom';
3  import App from './App';
4  import { BrowserRouter } from 'react-router-dom';
5
6  ReactDOM.render(
7    <BrowserRouter>
8      <App />
9    </BrowserRouter>,
10   document.getElementById('root')
11 );
12
```

Index.js

```
1  export default function App() {
2    return (
3      <div>
4        <ul>
5          <Link to='/'>Home</Link>
6          <Link to='/about'>About</Link>
7        </ul>
8
9        <Switch>
10         <Route exact path='/' component={Home} />
11         <Route path='/about'>
12           <About />
13         </Route>
14       </Switch>
15     </div>
16   );
17
```
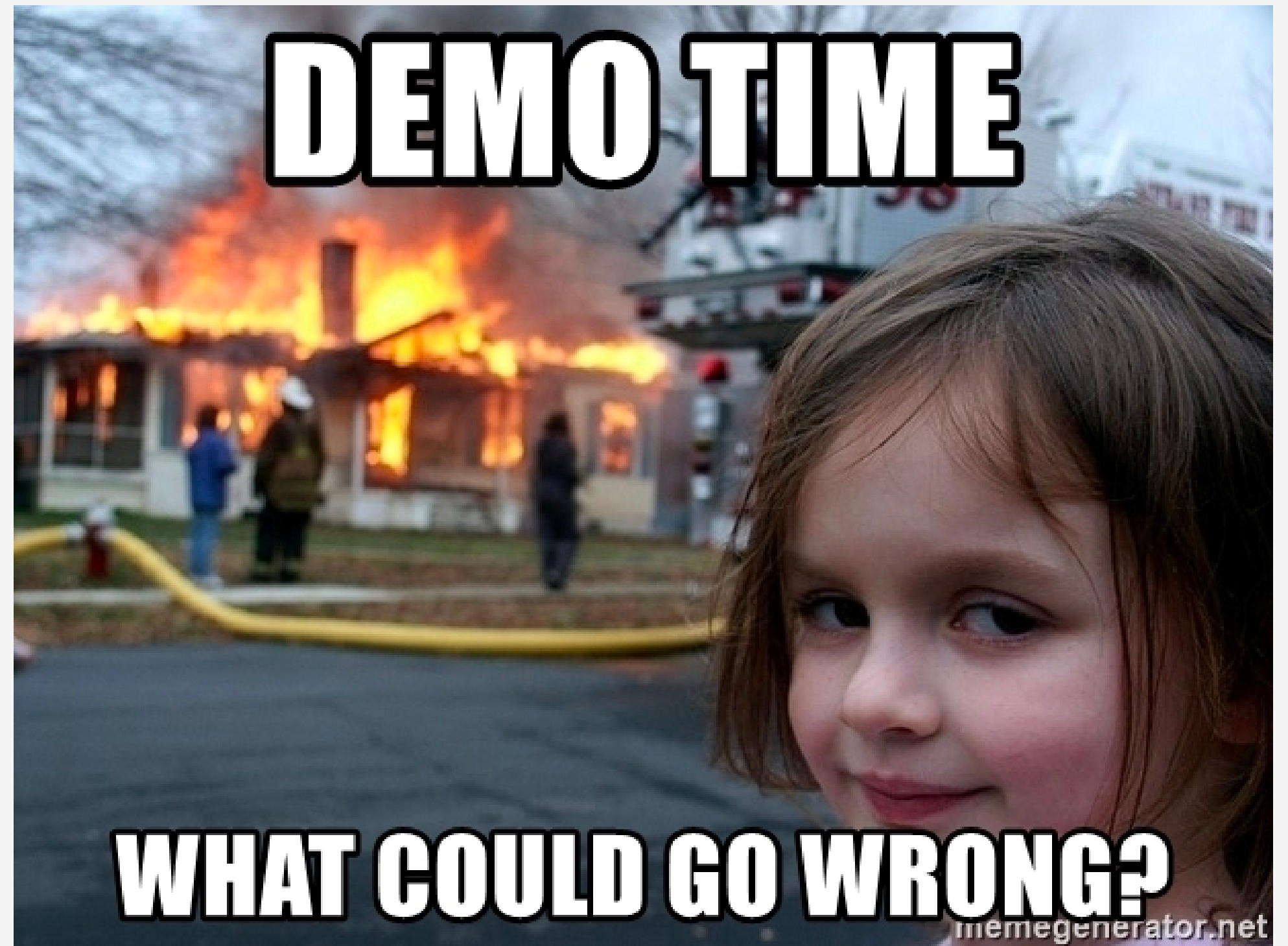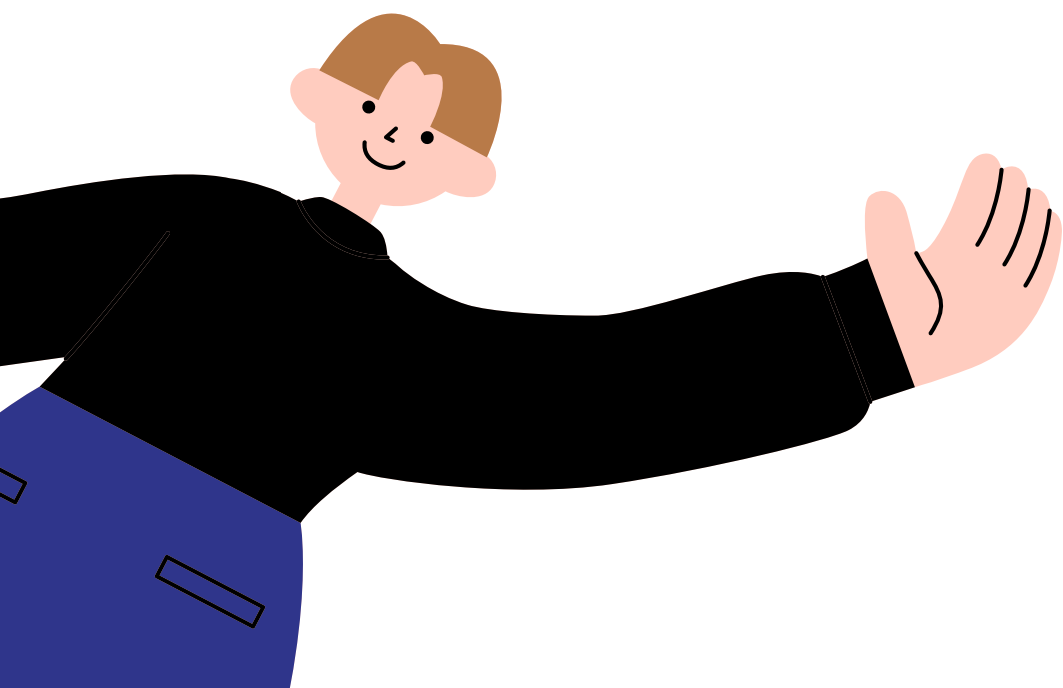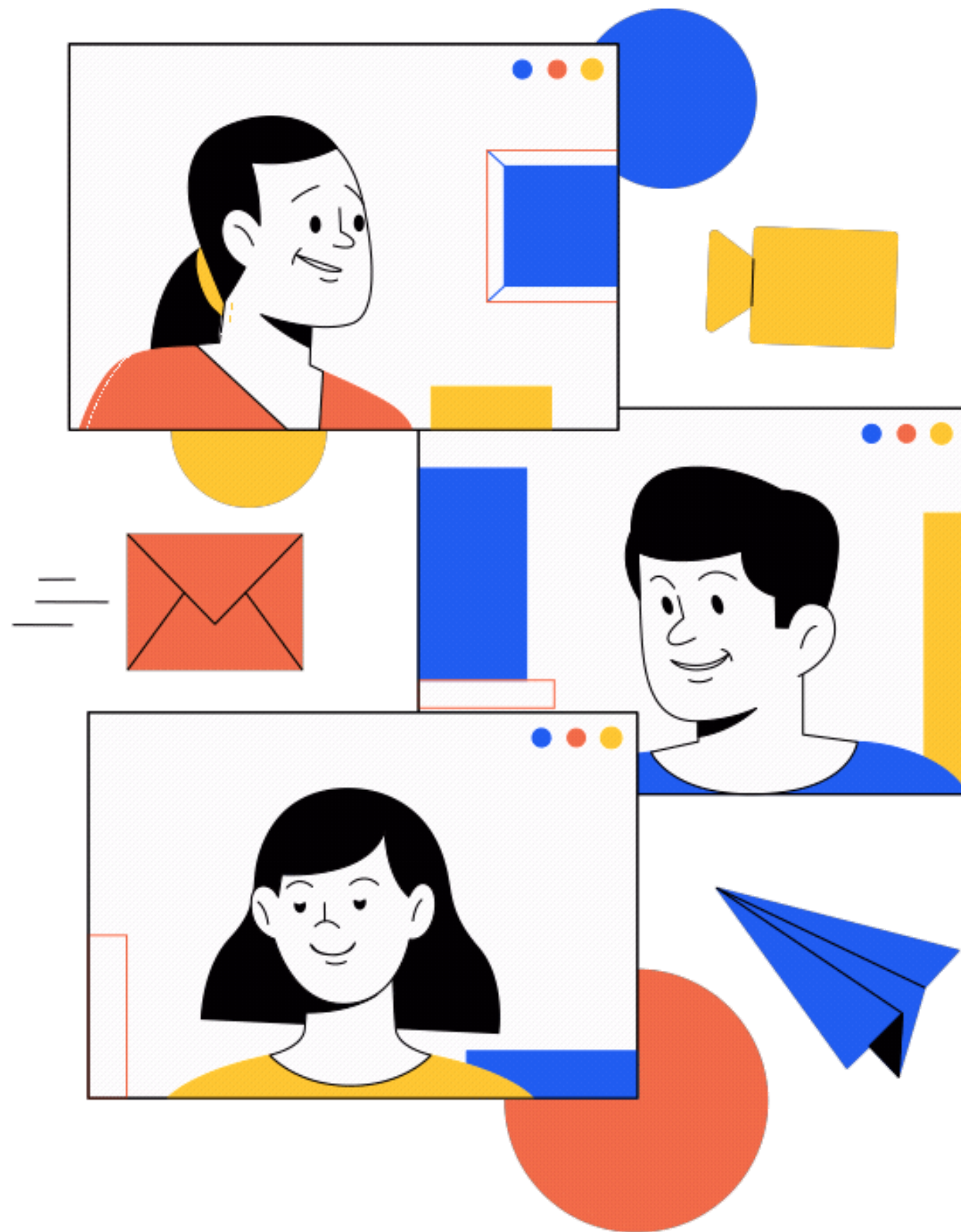
App.js

WARNING: Components names have changed since react–router–dom–v6

Its Demo Time

Next Session:
React Hooks

Any Questions?

Thank you for attending!

Feel free to email at **aghonem2011@gmail.com** or reach me at slack anytime for any questions or clarifications!

Follow me on Github **@3ba2ii**
code and slides are found at this **github repo**