MICROFONTENDS COURSE CONTENTS (5 Days)
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Module 1: Introduction to Micro Frontends

1. What are Micro Frontends?
2. Benefits and Challenges of Micro Frontends
3. Comparison with Monolithic and Single Page Applications (SPAs)
4. Use Cases for Micro Frontends

Module 2: Architecture and Design Principles

1. Module Isolation and Boundaries
2. Communication Between Micro Frontends
    - Cross-origin Communication (CORS)
    - Communication Patterns: Event Bus, API Composition
3. Styling and Theming Strategies
    - Scoped CSS
    - CSS-in-JS
    - Design Systems

Module 3: Technology Stack

1. Frameworks and Libraries for Micro Frontends
    - React, Angular, Vue.js, etc.
2. Web Components
    - Creating and Using Web Components
    - Integration with Micro Frontends

Module 4: Building Micro Frontends

1. Structuring Micro Frontends
    - Folder Structure
    - Shared Libraries and Dependencies
2. Development Workflow and Tooling
    - Module Bundlers (Webpack, Parcel)
    - Code Splitting
    - CI/CD for Micro Frontends

Module 5: State Management

1. Local State vs. Shared State
2. State Management Libraries
    - Redux, Mobx, etc.
3. Cross-Micro Frontend State Sharing

- State Management: Explain various approaches to state management

within a microfrontend architecture.

Module 6: Routing and Navigation

1. Routing Strategies for Micro Frontends
    - Centralized vs. Decentralized Routing
2. Integrating Routing with Micro Frontends
3. Handling Navigation Events

Module 7: Testing and Quality Assurance

1. Unit Testing of Micro Frontends
2. End-to-End Testing and Integration Testing
3. Performance and Accessibility Testing
4. Continuous Integration and Deployment

- Testing Strategies: Discuss testing strategies specific to microfrontends.
- Cover unit testing, integration testing, end-to-end testing, and how to set up automated testing pipelines for microfrontend projects.

Module 8: Microfrontend implementation using patterns

1. Cross-Site Scripting (XSS) Mitigation
2. Iframe
3. Using Ajax
4. With Routing
5. SSI
6. Timeouts
7. Web Component Composition
8. PWA
9. Single SPA
10. Client Side Rendering
11. Universal Rendering
12. Parent Child Communication
13. Child parent communication
14. Fragment to Fragment Communication
15. Flat Routing
16. Shadow DOM
17. Isolated CSS

Module 9: Scaling and Performance Optimization

1. Scalability Challenges and Solutions
2. Lazy Loading and Code Splitting
3. Caching and Content Delivery Networks (CDNs)
4. Performance Monitoring and Optimization

Module 10: Deployment

1. Understanding how microfrontends can coexist with these solutions and leverage their features.
2. Docker Integration
3. Bundling Strategies: How to effectively use webpack to bundle your app.
4. Lessons from Other Companies' Micro Frontend Implementations
5. Section on how to manage versioning and dependencies effectively within a microfrontend architecture.
6. Advanced Integration Techniques: Since we use Engage360/FXP, a session to advanced integration techniques would be useful.

Module 11: Future Trends and Best Practices

1. Emerging Technologies in Micro Frontends
2. Industry Best Practices and Patterns
3. Micro Frontends vs. Server-Side Rendering (SSR) vs. Static Site Generation (SSG)