Exam questions

Frontend exam Juni 2024

Question 1

JS

1. What are higher-order functions in JavaScript and what are the benefits? Show some examples in your own code.

REACT

2. What is the main concept of an React component and what are its different building blocks?
3. Explain the benefits of using components compared to how you would build a web application in vanilla javascript.

Security/Routing/Styling

4. Explain what React-Router is and which problems does it solve?
5. Show and explain the essential building blocks like `BrowserRouter, Routes, Route, Outlet, path, element... .`

Question 2

JS

1. Show some examples where you used a callback function and explain why you used them.

REACT

2. What is JSX? Provide an example.
3. How would you write JSX if you only used HTML and Javascript?

Security/Routing/Styling

4. Describe the purpose of `flexbox` and `grid` in css, and show some examples of what can be achieved by applying them.

Question 3

JS

1. What is the purpose of the package.json file and what can you do with it?

REACT

2. Show and describe the purpose of props including `children`.
3. Show and explain the role of state in a React component.

Security/Routing/Styling

4. Describe conceptually how we deploy a React frontend application to a docker container on a virtual machine.

Question 4

JS

1. Show and explain the concept of promises in JavaScript.

REACT

2. Explain the following code:

```jsx
import React, { useState, useEffect } from 'react';

const ErrorBoundary = ({ children }) => {
  const [hasError, setHasError] = useState(false);

  useEffect(() => {
    const handleError = (error, info) => {
      console.error('Error caught by error boundary:', error, info);
      setHasError(true);
    };

    window.addEventListener('error', handleError);

    return () => {
      window.removeEventListener('error', handleError);
    };
  }, []);

  if (hasError) {
    return <h1>Something went wrong.</h1>;
  }

  return children;
};

const MyComponent = () => {
  return (
    <ErrorBoundary>
      {/* The rest of the component tree goes here */}
    </ErrorBoundary>
  );
};
```

Security/Routing/Styling

3. What is the purpose of Træfik?

Question 5

JS

1. Show the difference between synchronous and asynchronous programming and how does async and await fit into this?

REACT

2. Provide examples for different ways of doing conditional rendering.

Security/Routing/Styling

3. Show and explain conceptually a typical flow of using JWTs for user authentication in a React application.

Question 6

JS

1. What is the difference between localStorage and sessionStorage in JavaScript?
2. Show the use of different storage options in browsers developer tools.

REACT

3. Show and explain the three parts (`effect function` , `dependency array` and `cleanup function`) of the useEffect hook?

Security/Routing/Styling

4. Show and explain of what a JWT token is composed

Question 7

JS

1. Show an example of using the window object in JavaScript?

REACT

2. Show and describe event handling in React (with reference to the SyntheticEvent object).
3. Show examples of how to handle form submit events, and how to handle input change events.

Security/Routing/Styling

4. Describe and show the process og login using JWT. What problem does it solve?

Question 8

JS

1. Show and explain the concept of event bubbling in JavaScript.

REACT

2. Show and explain how the map function is used for rendering lists in React and explain the purpose of the `key` attribute in React lists?

Security/Routing/Styling

3. Describe conceptually what HTTPS is and how we got it working on our deployed websites.

Question 9

JS

1. What is the scope of a variable in JavaScript? Explain the difference between global and local scope.

REACT

2. Show and explain how controlled components are different from uncontrolled components in React forms?

Security/Routing/Styling

3. Show and explain an example of sub-routing.

Question 10

JS

1. Show and explain the spread operator in JavaScript and how it differs from the rest operator?

REACT

2. What are React Hooks? Provide examples of at least two built-in hooks.
3. Show example of how you handle errors in React.

Security/Routing/Styling

5. Describe conceptually what Same Origin Policy (SOP) and Cross Origin Ressource Sharing (CORS) are, and how we avoid getting CORS errors when fetching data from your API.

Question 11

JS

1. Show and explain the difference between synchronous and asynchronous programming and how `async and await` fit into this?

REACT

2. Show and explain the purpose of `lifting state up` in React.

Security/Routing/Styling

3. Show how you can use `flexbox` in `Styled-Components` .

Question 12

JS

1. Show and explain the concept of promises in JavaScript.

REACT

2. Provide examples for different ways of doing conditional rendering.

Security/Routing/Styling

3. Describe the purpose of `flexbox` and `grid` in css, and show some examples of what can be achieved by applying them.

Question 13

JS

1. What are higher-order functions in JavaScript and what are the benefits? Show some examples in your own code.

REACT

2. Show and describe the purpose of props including `children`.
3. Show and explain the role of state in a React component.

Security/Routing/Styling

4. Describe and show the process og login using JWT. What problem does it solve?