

Mobile Application Development Internship Assignment

Section A: Multiple Choice Questions (20 marks)

1. What is React Native?

- a) A cross-platform framework for building mobile apps using JavaScript. (a) is correct answer
- b) A platform-specific framework for building mobile apps using Java or Swift
- c) A desktop application development framework
- d) A web development framework

2. What is the purpose of the Flexbox layout in React Native?

- a) To create a responsive design that adapts to different screen sizes. (a) is a correct answer
- b) To create a fixed layout that remains the same regardless of screen size
- c) To create a layout that is optimized for performance
- d) To create a layout that is optimized for accessibility

3. What is the difference between props and state in React Native?

- a) Props are used to pass data between components, while state is used to manage data within a component. (a) is a correct answer
- b) Props and state are the same thing
- c) Props are used to manage data within a component, while state is used to pass data between components
- d) None of the above

4. Which of the following is NOT a valid way to style a React Native component?

- a) Inline styles
- b) External stylesheets
- c) JavaScript styles
- d) CSS styles. (d) is a correct answer

5. What is the purpose of the fetch() method in React Native?

- a) To make HTTP requests to a server. (a) is a correct answer
- b) To retrieve data from a local database
- c) To update the state of a component
- d) None of the above

6. What is the difference between setState() and forceUpdate() in React Native?

- a) setState() updates the state of a component and triggers a re-render, while forceUpdate() re-renders a component without updating its state. (a) is a correct answer
- b) setState() and forceUpdate() are the same thing
- c) forceUpdate() updates the state of a component and triggers a re-render, while setState() re-renders a component without updating its state
- d) None of the above

7. Which of the following is used to handle user input in React Native?

- a) TouchableOpacity
- b) TouchableHighlight
- c) TouchableWithoutFeedback
- d) All of the above. (d) is a correct answer

8. What is the purpose of the AsyncStorage module in React Native?

- a) To store data permanently on the device. (a) is a correct answer
- b) To store data temporarily on the device
- c) To store data in the cloud
- d) None of the above

9. What is the purpose of the Animated API in React Native?

- a) To create complex animations using JavaScript. (a) is a correct answer
- b) To create basic animations using CSS
- c) To create complex animations using CSS
- d) None of the above

10. Which of the following is used to navigate between screens in a React Native app?

- a) StackNavigator
- b) DrawerNavigator
- c) TabNavigator
- d) All of the above. (d) is a correct answer

Section B: Programming Questions (80 marks)

11. Create a new React Native app called "MyApp".

- a) What command(s) would you use to create this app?
- b) What is the directory structure of the app?
- c) What file(s) would you modify to change the app's appearance?

12. Create a new component called "MyButton" that displays a button with the text "Click me".

- a) What props would you pass to this component to change the button's appearance?
- b) What state would you use to handle clicks on the button?

13. Create a new component called "MyList" that displays a list of items.

- a) What props would you pass to this component to change the list's appearance?
- b) What data structure would you use to store the list items?
- c) How would you render the list items?

Section C

14. Write a function called "getWeather" that makes an HTTP GET request to the OpenWeatherMap API and returns the temperature for a given city.

- a) What parameters would you pass to this function?
- b) What is the URL for the OpenWeatherMap API?
- c) How would you handle errors or exceptions in this function?

15. Create a new screen in your app called "ProfileScreen" that displays the user's profile information.

- a) What navigation method would you use to navigate to this screen?
- b) What props would you pass to this screen to display the user's information?
- c) What component(s) would you use to display the user's information?

16. Create a custom hook called "useLocalStorage" that allows you to store and retrieve data from the device's local storage. The hook should take a key and a value as arguments and return a tuple containing the current value and a setter function.

- a) How would you use this hook to store and retrieve data from local storage?
- b) How would you handle errors or exceptions in this hook?

17. Create a new component called "MyImagePicker" that allows the user to select an image from their device's photo gallery.

- a) What external library or module would you use to implement this component?
- b) What props would you pass to this component to customize its appearance?
- c) How would you handle errors or exceptions when selecting an image?

18. Create a new screen in your app called "SettingsScreen" that allows the user to change their app settings, such as language or theme.

- a) What navigation method would you use to navigate to this screen?
- b) What data structure would you use to store the user's settings?
- c) How would you save the user's settings so they persist across app sessions?

19. Write a function called "generatePassword" that generates a random password with a given length and complexity.

- a) What parameters would you pass to this function?

- b) What algorithm or library would you use to generate the password?
- c) How would you ensure that the password meets the required complexity criteria?

20. Create a new component called "MyMap" that displays a map of a given location using the Google Maps API.

- a) What props would you pass to this component to specify the location?
- b) How would you handle errors or exceptions when displaying the map?
- c) How would you optimize the performance of this component when displaying large maps?

Section D: Short Answer Questions (20 marks)

21. Explain the concept of "props drilling" in React Native.
22. What is the difference between a "controlled" and "uncontrolled" component in React Native?
23. What is the difference between "component state" and "application state" in React Native?
24. What is Redux and how does it relate to React Native?
25. How would you optimize the performance of a React Native app that has a large number of components?

Note:

- The marks assigned to each question are indicative and can be adjusted as per the requirements of the internship program.
- Your project should be on an online repository (Gitlab, Github,...)

☐ Submission

- Task total duration - 120 hours.
- Output must be hosted on github/Gitlab and sent with a link along with any material in PDF format. **Outputs not hosted on github will not be considered.**

Best Practices

- Create reusable components
- Lint your code
- Remove unnecessary/redundant codes

✦ Bonus

- If you used Typescript