Research Paper – 3

Mobile App development trends

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1. **We reviewed 12 Mobile UI/UX Design Trends in Week 9 class.** Pick two of the UI/UX design trends discussed in class that you might use to create an app that runs on both Android and iOS. Explain how you would use both design trends in a mobile application. (5 Marks)

Ans.

1. **Biometric Authentication:**

1) Password-Free Authentication:

Face ID for iOS and fingerprint recognition for both Android and iOS should be implemented.

Allow users to utilize biometric authentication for a more secure and smooth login experience.

2) Authentication Using Tokens:

For sign-ins to services such as Google or Apple, use token-based authentication.

2. **Swipe of Liquid:**

1) Integration of the Library:

Integrate an iOS and Android liquid swipe transition library.

Enhance the overall user experience by customizing animations to match the smoothness of the liquid swipe.

2) Page Layout:

Create material in a card-based style that will be shown on the right side of the screen.

To move among articles or cards, enable horizontal swiping.

3.Buttonless Design:

1) Gesture-Based Interaction:

Reduce the usage of traditional buttons in favour of swipe motions for navigation.

Swipe motions can be used to navigate back, access menus, or interact with information.

2) Visual Indicators:

To help users through the swipe interactions, employ subtle visual hints or introduction animations.

Ensure that users comprehend the navigation motions.

4. Cross-Platform Development:

1) Frameworks:

Consider using a cross-platform development framework such as React Native or Flutter.

Ensure that the UI and functionality are consistent across Android and iOS devices.

2) Design for Responsiveness:

Make the app UI flexible to different screen sizes and orientations.

To ensure a consistent experience, test the app on several devices.

5. **Security Considerations:**

1) Biometric Data Security:

Implement safe biometric data storage while adhering to platform-specific security rules.
Encrypt the app's communication with the server.

2) OTP Safety:

If you use OTPs, make sure they are transmitted and stored securely. Use time-sensitive OTPs to increase security.

6. **Testing:**

1) Device and Usability:

Extensive testing of the software on numerous Android and iOS devices is recommended.

Test usability to ensure that the password-free login, liquid swiping, and buttonless design components improve the user experience.

7. **Submission to the App Store:**

1) Guidelines Observance:

Follow the Apple App Store and Google Play Store rules.

To guarantee successful app submissions, adhere to security and design criteria.

8. **Constant Improvement:**

1) User Reactions:

Utilize analytics and reviews to get user feedback.

Update the app on a regular basis to resolve any bugs, provide new features, and keep current with industry trends.

I can develop a modern, safe, and intuitive app experience by adding these aspects, which coincide with the trends of password-free authentication, smooth swipe transitions, and buttonless design.

2. Research two different Mobile application Cloud Service Providers. List three of the services they each provide to support mobile apps. Decide which provider you would use to build an application that needs to run on both iOS and Android and explain why you chose that provider.

Ans.

Amazon Web Services (AWS) and Microsoft Azure are two famous Mobile Application Cloud Service Providers. Let's look at three services that each supplier provides to assist mobile apps:

1. **Amazon Web Services (AWS):**

1) **Amazon Cognito:**

Amazon Cognito is an identity and access management service that enables mobile and online app authentication, authorization, and user management.

Key characteristics include:

User registration and login.
Federated Identities (helps suppliers of social identities).
MFA stands for Multi-Factor Authentication.

2) **Amazon Web Services AppSync:**

Service Description:

AWS AppSync makes it easier to create safe and scalable GraphQL APIs. It allows mobile and web apps to synchronize data in real time and access data offline.

Key characteristics include:

Data updates in real time.
Data Access While Not Connected to the Internet.
Integration of several data sources.

3) **Amazon Web Services Mobile Hub:**

AWS Mobile Hub is a complete cloud solution for developing, testing, and monitoring mobile apps. It offers a centralized platform for managing mobile app development and resources.

Key characteristics include:

Analytics for Mobile Apps.
Cloud Logic (AWS Lambda).
App Content Delivery (Amazon CloudFront).

2. **Microsoft Azure**

1) **Azure Active Directory B2C:**

Azure Active Directory B2C is an identity management solution that allows clients to customize and control how they sign up, sign in, and manage their profiles.

Key characteristics include:

Integration of Social Identity.
Authentication with many factors.
The user interface may be customized.

2) **Azure Mobile Applications:**

Azure Mobile Apps is a collection of services for developing and consuming mobile apps. Offline data sync, authentication, and push alerts are all supported.

Key characteristics include:

Offline data synchronization.
Azure AD authentication.
Notifications by Push.

3) **Azure Application Service:**

Azure App Service is a fully managed platform for developing, deploying, and scaling web applications. It is compatible with a wide range of languages and frameworks.

Key characteristics include:

Support for several platforms.
Deployment that is ongoing.
Autoscaling.

Decision:

The decision between AWS and Azure for developing an app that must operate on both iOS and Android is influenced by a variety of variables, including specialized requirements, platform familiarity, and economic concerns.

Amazon Web Services (AWS) may be a good choice if you value a wide selection of services, robust mobile support, and easy connectivity with other AWS services. AWS has a well-established ecosystem and offers a complete collection of mobile app development tools.

However, if your company is already involved in Microsoft technology, Azure might be a logical match. Azure provides a variety of services for mobile apps, and if you need strong connection with Microsoft products, Azure may be the best option.

In the end, the selection may be influenced by variables such as existing infrastructure, development team skills, and unique feature needs. Before making a selection, it's essential to examine both suppliers based on your project's specific requirements.

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