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Exploring Common Android APIs

A Beginner's Guide to Mobile App Development

Agenda

1. Introduction and Data Management
2. Networking and Web Integration
3. Device Features and Deployment

Introduction and Data Management

Getting Started with Android APIs

What are Android APIs?

- APIs are tools that let apps interact with Android features.

Building Powerful Mobile Apps

- APIs help developers add advanced functions like data storage and networking.

Key API Categories

- Includes **data storage**, **networking**, web access, and telephony.

Importance of Understanding APIs

- Knowing APIs is essential for creating modern Android apps.

Android Data and Storage APIs



Types of Android Storage

- Android supports **SharedPreferences**, internal storage, and external storage.



Saving User Data

- Use SharedPreferences for simple settings and preferences.
- Files and databases store larger or structured data.



Choosing the Right API

- Select storage based on **data size** and **security needs**.

Managing Data with SQLite



What is SQLite?

- A built-in database for Android apps
- Stores structured data locally



Basic Operations

- Create tables to organize data
- Insert, update, and query data using **SQL commands**



Why Use SQLite?

- Easy to use and lightweight
- No need for external servers

Sharing Data with Content Providers

What Are Content Providers?

- Enable apps to **share data** with other apps securely.
- Act as a bridge for accessing and managing shared data.

How Data Is Accessed

- Use **URIs** (Uniform Resource Identifiers) to locate and interact with data.
- Standard methods: query, insert, update, delete.

Common Use Cases

- Share contacts, media files, or custom app data between apps.
- Useful for apps needing access to system or other app data.



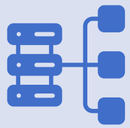
Networking and Web Integration

Using Android Networking APIs



Connecting Apps to the Internet

- Android networking APIs allow apps to access web resources and online services.



Common Networking Tasks

- Apps can download data, upload files, and make **HTTP requests** to servers.



Popular Networking Libraries

- Libraries like **Volley** and **Retrofit** simplify network operations and handle responses efficiently.



Handling Data and Errors

- APIs help manage data transfer, handle errors, and ensure smooth user experience.

Exploring Android Web APIs



Displaying Web Content in Apps

- Android's WebView lets apps show web pages directly inside the app.
- Users can browse websites without leaving the app.



Interacting with Web Services

- Apps use **REST APIs** to fetch or send data online.
- Common tasks include downloading images, posting data, or syncing information.



Benefits of Web APIs

- Enables real-time updates and access to online resources.
- Makes apps more interactive and connected.

- # Device Features and Deployment

Android Telephony APIs in Action



Accessing Phone Features

- Telephony APIs let apps interact with **calls, SMS, and network info**.
- Developers can check phone status or manage communication tasks.



Reading Device Information

- Apps can retrieve **SIM card details**, phone number, and network type.
- Useful for customizing app behavior based on device info.



Sending and Receiving SMS

- Telephony APIs allow sending SMS messages directly from the app.
- Apps can also listen for incoming SMS for notifications or actions.



Practical Uses

- Enable communication features like alerts, verification codes, or device monitoring.

Deploying Your Android App



Preparing Your App for Release

- Build your app in **release mode** for better performance.
- Test thoroughly to ensure quality and fix bugs.
- Sign your app with a **private key** for security.



Publishing to Google Play Store

- Create a developer account on the Play Store.
- Upload your signed APK or AAB file.
- Fill in app details, screenshots, and set pricing.



Making Your App Available Worldwide

- Choose countries and regions for distribution.
- Users can download your app from the Play Store.

Key Takeaways and Next Steps

Unlocking Android API Power

- APIs simplify tasks like data storage, networking, and telephony.

Build Better Apps

- Using common APIs helps create **feature-rich** and reliable apps.

Keep Learning and Practicing

- Explore new APIs, practice coding, and improve your skills.

