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Department of Master of Computer Applications (MCA)

Mobile Application Development (MCA221IA)

Hand Notes

Unit - 1	**Topic:** **The IDE, Main Editor**
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List of Questions

1. **Define the purpose of an IDE in Android development. (02 Marks)**
2. **What is an AVD and how do you create it? (04 Marks)**
3. **Explain the components of the Main Editor in Android Studio. (06 Marks)**
4. **Describe the Android Studio Project Tool Window. (08 Marks)**
5. **What is the role of the Project Manager in Android Studio? Explain in detail its features, usage, and how it helps manage various components of an Android project efficiently. (10Marks)**

02 Marks Questions:

Q: Define the purpose of an IDE in Android development.
Answer:

An IDE (Integrated Development Environment) like Android Studio provides tools like code editor, compiler, debugger, and emulator to simplify Android app development.

04 Marks Questions:

Q: What is an AVD and how do you create it?

Answer:

AVD stands for Android Virtual Device. It emulates a real Android device on your computer.
To create it:

1. Go to AVD Manager → Create Virtual Device.
2. Select device type.
3. Choose a system image.

4. Configure device settings.
5. Finish to create.

06 Marks Questions:

Q: Explain the components of the Main Editor in Android Studio.
Answer:

The Main Editor includes:

1. **Code Editor:** Where developers write XML/Java/Kotlin/Groovy code.
2. **Design Editor:** Visual layout tool for UI design.
3. **Tabs:** Navigate between files.
4. **Split View:** Allows simultaneous code and design editing.
   Code: Example layout file:

Code:

```
<TextView
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="Hello World!" />
<TextView
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"
  android:text="Hello World!" />
```

08 Marks Questions

Q: Describe the Android Studio Project Tool Window.
Answer:

Project Tool Window provides a structured view of your project. Components include:

1. **App Module:** Contains manifest, Java/Kotlin code, and resources.
2. **Gradle Scripts:** Build configuration files.
3. **External Libraries:** Dependencies used.
4. **Manifests/Res/Java Folders:** Organized view of source files.
   Code: `build.gradle` (Module: app) example:

Code (if applicable):

```
android {
    compileSdkVersion 34
    defaultConfig {
        applicationId "com.example.myapp"
    }
}
```

10 Marks Questions

Q: What is the role of the Project Manager in Android Studio? Explain in detail its features, usage, and how it helps manage various components of an Android project efficiently.

Answer:

The **Project Manager** in Android Studio (also referred to as the **Project Tool Window**) plays a critical role in organizing, navigating, and managing all parts of an Android application. It gives developers a visual and structured view of their app's directory, configuration files, modules, and resources.

Key Features of Project Manager:

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1. Project View Modes:

- **Android View (default):** Shows a simplified view for Android development – grouped by app, manifests, Java, and resource folders.
- **Project View:** Shows the actual file hierarchy on disk – helpful for understanding file locations.
- **Packages / Scope / Problems View:** Useful for different debugging and modularization perspectives.

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2. Logical Grouping of Components:

- Groups code into modules like `app/`, `manifests/`, `java/`, `res/`, and `Gradle Scripts`.
- Helps developers focus on UI (`res/layout`), logic (`java/com.example`), or configurations (`build.gradle`) easily.

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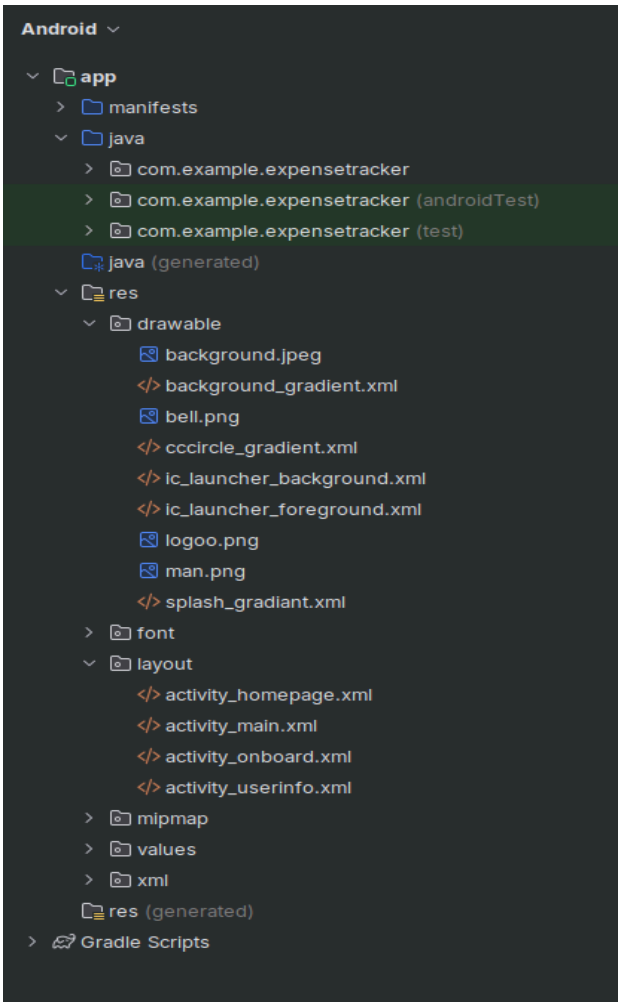
3. Quick File Access:

- Double-click any file in the Project Manager to open it in the Main Editor.
- Allows refactoring, renaming, and drag-drop operations directly from the project view.

Build Configuration Management:

- Provides access to **Gradle Scripts**, including:
    - `build.gradle` (Project and App level)
    - `settings.gradle`
    - `gradle.properties`
- Allows editing build behavior, managing dependencies, and updating SDK versions.

Diagram (if applicable):


Android
app
manifests
java
com.example.expensetracker
com.example.expensetracker (androidTest)
com.example.expensetracker (test)
java (generated)
res
drawable
background.jpeg
background_gradient.xml
bell.png
cccircle_gradient.xml
ic_launcher_background.xml
ic_launcher_foreground.xml
logoo.png
man.png
splash_gradiant.xml
font
layout
activity_homepage.xml
activity_main.xml
activity_onboard.xml
activity_userinfo.xml
mipmap
values
xml
res (generated)
Gradle Scripts