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COM4510/6510
Software Development for Mobile Devices

Lab 2: Questions

Dr Po Yang
The University of Sheffield
po.yang@sheffield.ac.uk

Q1

- **1. Android is licensed under which open source licensing license?**

  A. Gnu's GPL

  B. Apache/MIT

  C. OSS

  D. Sourceforge

Q1

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- **Ans: B**

- The majority of the Android platform and documentation is licensed under **the Apache 2.0 license**. While the project strives to adhere to the preferred license, there may be exceptions, such as for documentation (code comments) extracted from a source code module that is licensed under GPLv2 or other license.

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Q2

- **2. Although most people's first thought Find when they think of Android is Google, Android is not actually owned by Google. Who owns the Android platform?**

A. Oracle Technology
B. Dalvik
C. Open Handset Alliance
D. The above statement is an Android is owned by Google

Q2

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- A. Oracle Technology
  B. Dalvik
  C. Open Handset Alliance
  D. The above statement is an Android is owned by Google
- **Ans: C**

- Android is a mobile operating system based on a modified version of the **Linux kernel** and other open source software, designed primarily for touchscreen mobile devices such as smartphones and tablets.
- Android is developed by a consortium of developers known as the **Open Handset Alliance** and **commercially sponsored by Google.**
- The **Open Handset Alliance (OHA)** is a consortium of 84 firms to develop open standards for mobile devices. Member firms include HTC, Sony, Dell, Intel, Motorola, Qualcomm, Texas Instruments, Google, Samsung Electronics, LG Electronics, T-Mobile, Sprint Corporation.

Q3

- **3. Find what was Google's main business motivation for supporting Android?**
- A. To level the playing field for mobile devices
  B. To directly compete with the iPhone
  C. To corner the mobile device application market for licensing purposes
  D. To allow them to advertise more

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Q3

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A. To level the playing field for mobile devices
B. To directly compete with the iPhone
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Ans: D

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Q4

- **4. Android doesn’t make any assumptions about a device’s screen size, resolution, or chipset.:**
- A. True
  B. False

Q4

- **4. Android doesn’t make any assumptions about a device’s screen size, resolution, or chipset.:**
- **A. True**
  B. False

Ans: A

Android was designed to run on all sorts of physical devices. Android doesn't make any assumptions about a device's screen size, resolution, chipset, and so on. Its core is designed to be **portable**.

Q5

- **5. Android is based on Linux for the following reason.**
- A. Security
  B. Portability
  C. Networking
  D. All of these

Q5

- **5. Android is based on Linux for the following reason.**

- A. Security
  B. Portability
  C. Networking

D. All of these

Ans: D
(Lecture 1 Page 29-31)

A Secure Linux System

- Android OS is a **multi-user Linux system**
  - Each app is a different user
- The system assigns each app a **unique Linux user ID**
  - unknown to the app
- The system sets permissions for all the files in an app
  - so that only the user ID assigned to that app can access them
- Each process has its own **virtual machine (VM)**, so an app's code runs in isolation from other apps
- By default, every app runs in its own Linux process

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Q6

- **6. Find what is contained within the manifest XML file?**
- A. The permissions the app requires
  B. The list of strings used in the app
  C. The source code
  D. All other choices

Q6

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- **A. The permissions the app requires**
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  C. The source code
  D. All other choices

Ans: A

Manifest File Application Property Elements

Following is a list of important Application Property Elements in manifest.xml (Sub- Node Elements)

1. <uses-permission>: This element specifies the Android Manifest permissions that are requested for the purpose of security.
2. <permission>: This element sets permission to provide access to control for some components of the app.
3. <permission-groups>: This element sets permission to provide access to control for a set of components of the app.
4. <permission-tree>: This element refers to a specific component that is the owner of the set of components.
5. <instrumentation>: This element tells the interaction between the app and the system.
6. <uses-sdk>: This one specifies the compatibility of the app.
7. <uses-configuration>: This element specifies the permissions that are requested for the purpose of security.
8. <uses-feature>: This element specifies one hardware or software feature that is required by the Application.
9. <supports-screen, compatible-screen>: These elements tell the screen size and configuration.

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Q7

- **7. Find what is contained within the Layout XML file?**
- A. Orientations and layouts that specify Find what the display looks like.

B. The permissions required by the app.

C. The strings used in the app.

D. The code is compiled to run the app.

Q7

- **7. Find what is contained within the Layout XML file?**
- **A. Orientations and layouts that specify Find what the display looks like.**

B. The permissions required b
C. The strings used in the app
D. The code is compiled to ru

Ans: A

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.coordinatorlayout.widget.CoordinatorLayout xmlns:android="http://schema
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <com.google.android.material.appbar.AppBarLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:theme="@style/Theme.MyApplication.AppBarOverlay">

        <androidx.appcompat.widget.Toolbar
            android:id="@+id/toolbar"
            android:layout_width="match_parent"
            android:layout_height="?attr/actionBarSize"
            android:background="?attr/colorPrimary"
            app:popupTheme="@style/Theme.MyApplication.PopupOverlay" />

    </com.google.android.material.appbar.AppBarLayout>

    <include layout="@layout/content_main" />

    <com.google.android.material.floatingactionbutton.FloatingActionButton
        android:id="@+id/fab"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="bottom|end"
        android:layout_marginEnd="16dp"
        android:layout_marginBottom="16dp"
        app:srcCompat="@android:drawable/ic_dialog_email" />

</androidx.coordinatorlayout.widget.CoordinatorLayout>
```

Q8

- **8. Find what is an Activity?**
- A. A single screen the user sees on the device at one time
  B. A message sent among the major building blocks
  C. A component that runs in the background without any interface.
  D. Context refers to the application environment.

Q8

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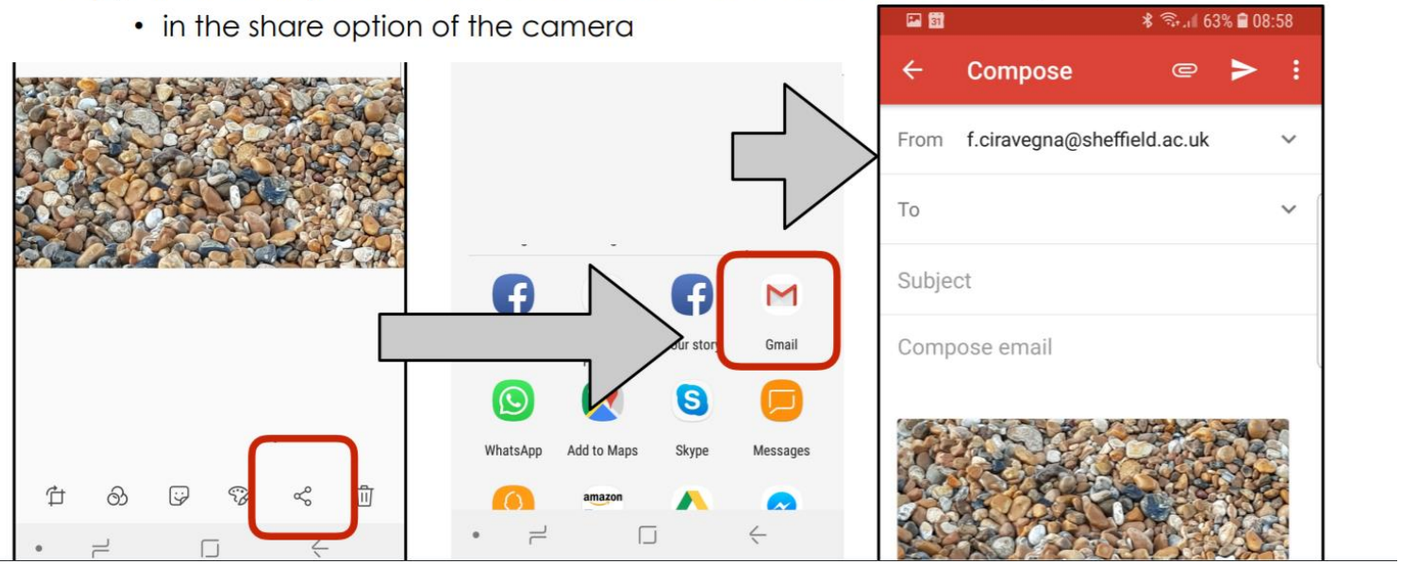
Ans: A

Activities

- Activities work together to form a cohesive user experience in an app,
  - each one is independent of the others
  - A different app can start **any** one of these activities if the email app allows it
  - For example in order to share, a camera app can start the activity in the email app that composes new mail to allow the user to share a picture
    - in the share option of the camera



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Q9

- **9. Intents**
- A. are messages that are sent among major building blocks
  B. trigger activities to being, services to start or stop, or broadcast
  C. are asynchronous
  D. all of these

Q9

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- A. are messages that are sent among major building blocks
  B. trigger activities to being, services to start or stop, or broadcast
  C. are asynchronous
  D. all of these

Ans: D

Activating components

- Activities, services, and broadcast receivers are activated by an *asynchronous message* called an ***Intent***
- Intents bind individual components to each other at runtime
  - You can think of them as the messengers that request an action from other components
  - internal to this app or internal to another app

Q10

- **10. Services have any user interface components**
- A. True
  B. False

Q10

- **10. Services have any user interface components**
- A. True
  B. False

Ans: B

Services

- A general-purpose entry point for keeping an app running in the background
  - Typically used to perform long-running operations or to perform work for remote processes
    - never ending services
    - services that stop after a task is performed
- A service does **not provide a user interface**
  - You must implement an Activity for interacting with users
- Example:
  - a service might play music in the background while the user is in a different app, or it might fetch data over the network without blocking user interaction with an activity