LAB1

1.1

1. Object: By default, the Object class is the parent of all Java classes. In other words, it is the most fox class in java.
   Public class MyClass {
    Int x = 5;
   }

2. Class: A class is a description of the object to be created. Each class has a class name, in which there are properties such as class data and class applications (functions) called methods.

   Public class MyClass {
        Static void myMethod(){}
   }

3. Instantiation of object (creating an object): In Java, constructor is a special method, it is used to initialize and return the object of the class that it is defined. Constructors will have names that are identical to the name of the class to which they are defined, and they must not define a return value type.

   Fan myfan = new Fan();

4. Visibility(public/private/protected):

   Public: When a method or variable is declared public, it means that all other classes, including those not in the same package, can be accessed.

   Public void MyClass(){}

   Private: When a method or variable is declared private, it will not be accessible from other classes, including classes with the same source file or subclasses.

   Private int grade = 0

   Protected: The Protected modifier is quite similar to the default modifier, it limits access in the same package, but with the protected modifier, it also allows

   access from subclasses even when the subclass is not in the same package as the parent class. (access by inheritance case)

Protect int getGrade(){}

5. Member data/methods: Java functions or methods are code blocks perform functions and handling behaviors of the layer on the data area

   Member data:

   Logical type: Boolean.

   Integer types: bytes, short, char, int, long.

   Real number types (also called floating point types): float, double.

   Public class demo { public void demo () {} }

6. Inheritance: Inheritance is the relationship between two classes, including the parent and child classes. When inheriting a child class, all methods and properties of the parent class are inherited. However, it only has access to the public and protected members of the superclass. It is not allowed to access private members of the parent class.

   Class Child extends Base {}

7. Interface: In Java, Interface is a reference data type similar to Class, but can only contain constants and method names, not the method body (abstract method). A class describes the properties and actions of the object and Interface describes the actions of that class. Interfaces cannot be instantiated as classes but can be extended from other classes or inherited from other interfaces.

   Interface Fly{ void goForward(); void goDown(); }

8. Polymorphism: Polymorphism in Java is understood in each case, different circumstances, the object has different morphology depending on the context. The polymorphic object is considered to be a special object because sometimes this object becomes another object and sometimes this object becomes another object (depending on the circumstances). This "role-playing" into different objects helps the original polymorphic object to perform different actions of each specific object.

   Class DemoOverload{ public int add(int x, int y){return x + y}}

9. Overriding: In Java, overriding is defined as overriding the method, meaning that when a subclass inherits directly from a parent class, that subclass can redefine an existing method in the parent class to match the item, its destination.

   Class Demo{ public void todo() {} }

10. Abstract classes: Abstraction is a process of hiding detailed settings and showing the feature only to users. In other words, it only displays things that are important to the user and hides intrinsic details, for example, to send a message, the user only needs to text and send the message. You do not know the internal processing of message delivery. Abstraction helps you focus more on the object rather than on how it works.

Public abstract class Demo extends AppCompatActivity {}

1.3

1. The programming can be use for Android app development: C++, C#, Java, Kotlin, HTML5+CSS+Javascript, Python, Lua

2. Android Package Kit (APK for short) is the file format used by the Android operating system to distribute and install mobile applications. Like a Windows (PC) system that uses an .exe file to install software, Android will use the APK file.

3. The Android operating system is a multi-user Linux system in which each app is a different user. By default, the system assigns each app a unique Linux user ID

4. Activities : The Activity class is the most important component of the Android application, the way it operates constitutes the basis of the application programming model. Android launches a regular application by activating an Activity that corresponds to its specific life cycle during operation.
Services : Service is one of the four components of an Android application that can perform time-consuming tasks without a user interface (UI). From Activity, you can launch a Service in Android and then turn off the application to switch to another application where the Service continues to work without being killed.
Broadcast receivers : The Broadcast Receiver is one of the four major components in Android, with the purpose of listening to events, the state of the system emitted via the Intent so that programmers can handle system events on the side. in his application.
Content providers : Content provider component is used for saving data to device file system. Data can be for example SQLite database

5. Manifest file contains information about application. It defines all application components (files). It also defines needed user permissions, Android API level, hardware requirements and libraries

6. Resources are needed for avoiding putting everything into application source codes. Application can contain multiple resources. User interfaces are defined in XML files then user interface can be modified without changing source code

(java). If application needs to support multiple languages, translations for each language can be defined in XML files.

UI Hierarchies (Layouts)
Code creates static array of country names which is then used together with Array Apdapter which creates objects for ListView to show on phone screen.