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## Lab Assignment - 10 (JP)

\* Aim:

Write a simple Hello World application using Android SDK.

\* Objective:

- To learn installation and get familiar with Android ADT.
- To apply Java programming knowledge to Android Platform in smart phones.
- To study an implementation on Android simulator and design basic Android application.
- To understand entire Android App Development cycle, enable students to independently create Android Application.

\* Theory:

→ Introduction to android ADT:

Android Developer tools is a plugin for Eclipse IDE that provides powerful integrated environment for building Android apps. ADT extends capabilities of Eclipse to let you quickly set up new Android project, create application UI, debug your apps using Android SDK tools.

→ Libraries, Android Runtime, Android SDK Android SDK is a software development kit that includes comprehensive set of development tools.

Android Runtime is an application runtime environment used by Android operating system, ART performs translation of application's byte code into native instructions that are later executed by device's runtime environment.

→ Description of some packages and methods used in programs like:

i) Import android.app.Activity;

An activity is single focused thing that user can do, the Activity class takes care of creating a window for you in which you can place your UI with.

ii) Import android.os.Bundle

Bundle is a utilities class that lets you store a set of name-value pairs. You will always find this import along with import java Activity class.

iii) Import android.widget.TextView

A user interface element that displays text to user. To provide user-editable text.

iv) On Create ()

Called when activity is first created. This is where you should do all your normal static set up: create, view, bind data to list. This method also provides you with a Bundle containing activity's previously frozen state if there was one.

v) Saved Instance State ():

Android platform allows users to save any instance state. Instance state can be saved in Bundle.

vi) setContentView (viewview) or setContentView (view, View, LayoutParams params)

setContentView is used to fill window with UI provided from layout file in case of setContentView. Layout file is inflated to view and added to Activity content.

\* Platforms:

Eclipse with Android ADT / Android Studio.

\* Conclusion:

With Android ADT and developed "Hello World" application using Android SDK.

# FAD

1. List language used to build Android.

Ans Languages used to build Android App development are

i) Java

ii) Kotlin

iii) C++

iv) Python

v) C#

vi) HTML, CSS, JavaScript



2. What is Android Debug Bridge (ADB)?

Ans Android Debug Bridge is a versatile command line tool that lets you communicate with a device. ADB command facilitates a variety of device actions such as installing and debugging apps.

3. What is DDMs (Dalvik Debug Monitor Service)?

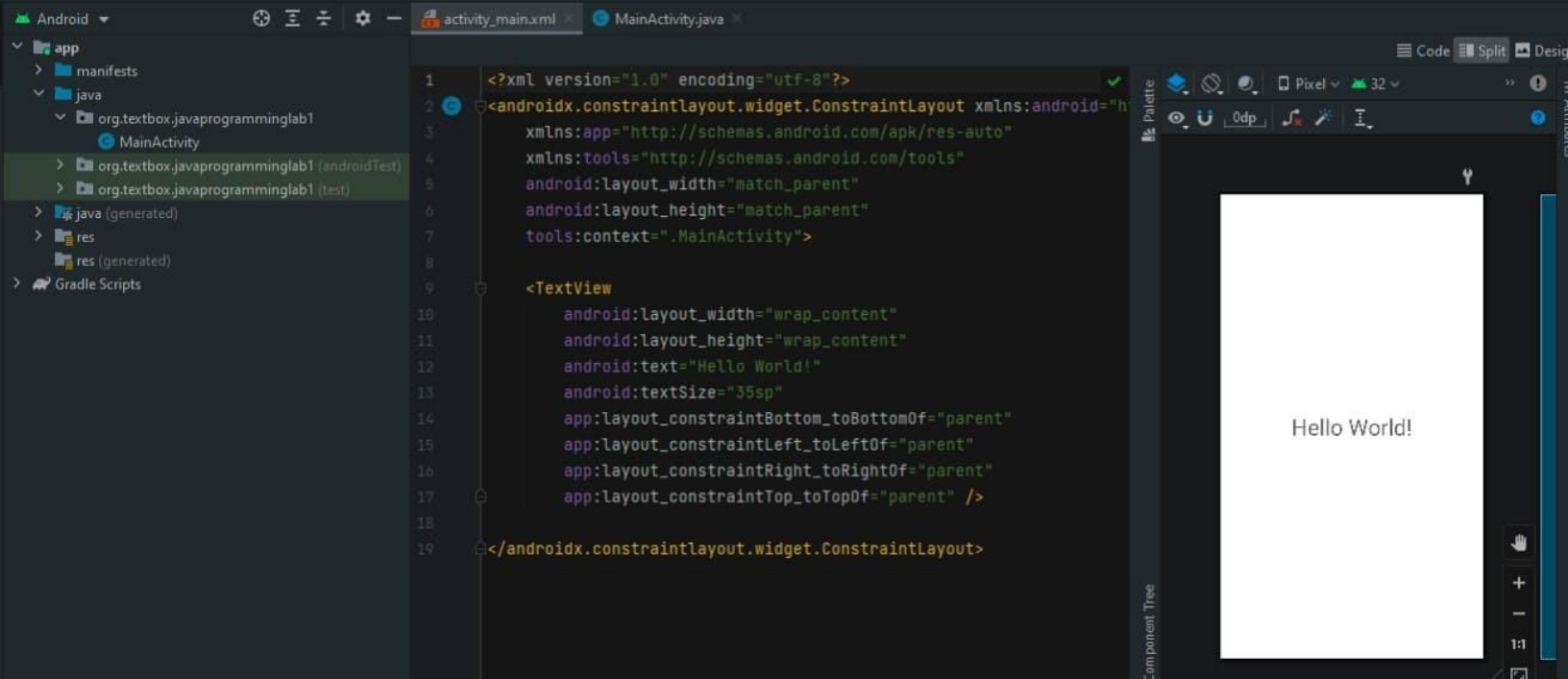
Ans Dalvik Debug Monitor Service is debugging tool used in Android platform. DDMs is download as part of Android SDK. Some of service provided by DDMs are heap monitoring and crash state information.

4. What are containers?

Ans Containers are packages of software that contain all of necessary elements to run in any environment. From a private data center to public cloud or even on a developer's personal laptop.

5. What is AndroidManifest.xml file and why do you need this

Ans AndroidManifest.xml file contains information of your package including components. It also declares the android:api and list of instrumentation classes.



- ▼ app
  - > manifests
  - ▼ java
    - ▼ org.textbox.javaprogramminglab1
      - MainActivity
      - > org.textbox.javaprogramminglab1 (androidTest)
      - > org.textbox.javaprogramminglab1 (test)
    - > java (generated)
    - > res
      - res (generated)
  - > Gradle Scripts

```
1 package org.textbox.javaprogramminglab1;
2
3 import ...
4
5
6
7 public class MainActivity extends AppCompatActivity {
8
9     @Override
10     protected void onCreate(Bundle savedInstanceState) {
11         super.onCreate(savedInstanceState);
12         setContentView(R.layout.activity_main);
13     }
14 }
```

# JavaProgrammingLab1

# Hello World!

