TASK GUIDE (B2.01)

A. Objectives.

Student will start the project to create simple game Android application. First with project configuration and resource configuration.

B. Requirements.

Hardware:
- 2 GB RAM minimum, 8 GB RAM recommended
- 2 GB of available disk space minimum, 4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)
- 1280 x 800 minimum screen resolution
- Intel processor with support for Intel VT-x, Intel EM64T (Intel 64), and Execute Disable (XD) Bit functionality

Software:
- Microsoft Windows 7/8/10 (32-bit or 64-bit)
- JDK 8
- Android Studio IDE (Minimum 3.2)

C. Resources.

Documents:
- Guide

Supplement files:
- ResourceTest.java
- ElementTest.java
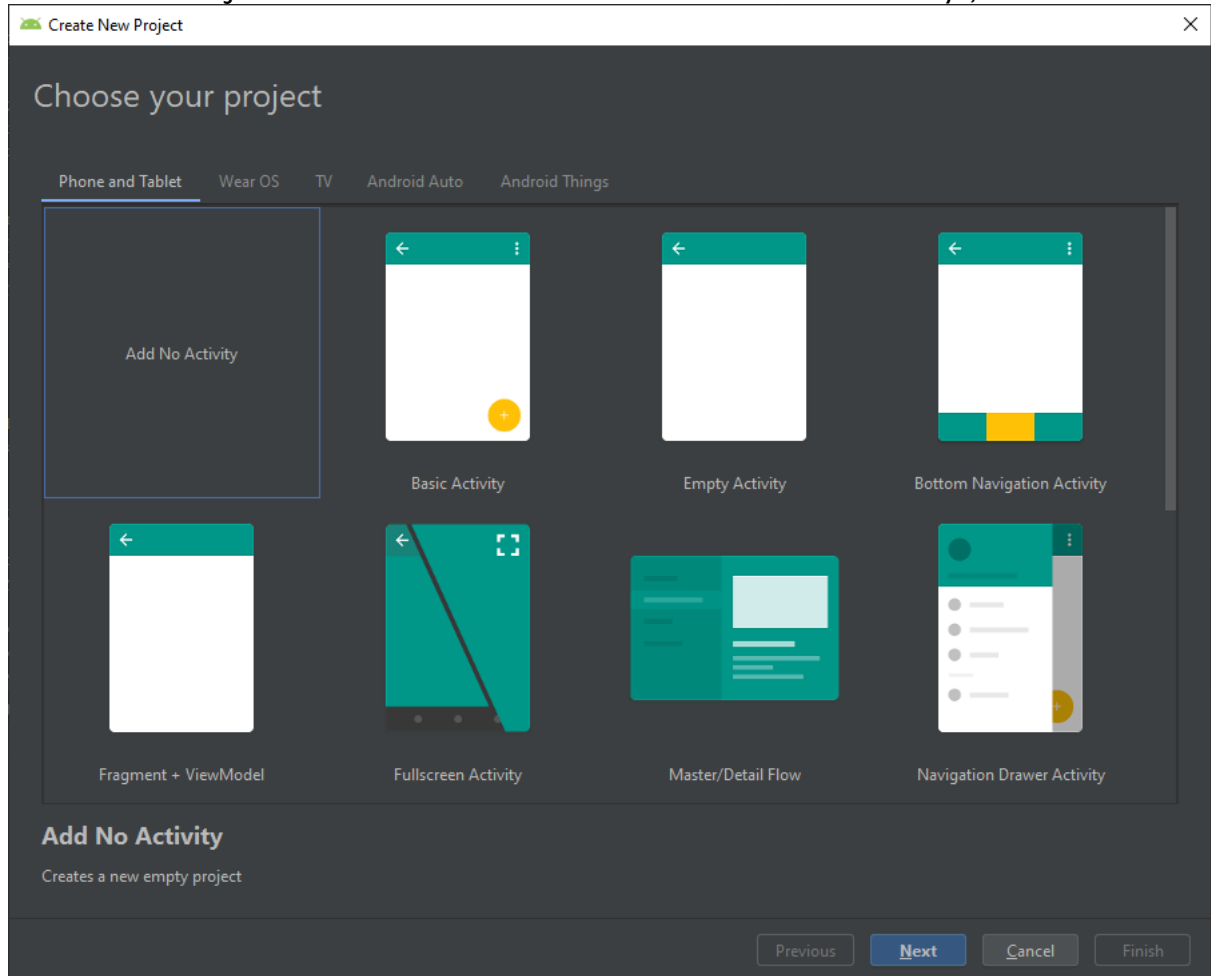- ViewTest.java

Test code:
- TestB2AdvancedWidgetsKT011.java
- TestB2AdvancedWidgetsKT012.java

D. Task Description.

Student start to create a project configuration and resource configuration.

E. Specification.

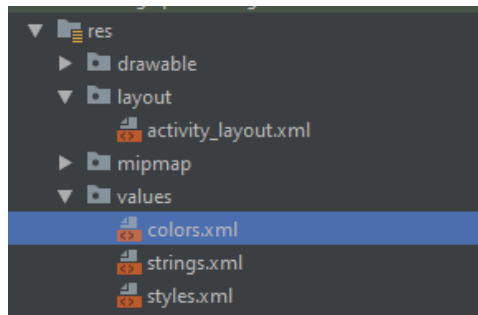1. Create New Project on Android Studio and choose "Add No Activity", then Next.

2. Project Configuration.
   - Project Name: ColorGame
   - Package Nam: org.aplas.colorgame
   - Project Location: any
   - Language: Kotlin
   - Target API Level: Android 5.0 (Lollipop)
   - Support instant apps: uncheck
   - AndroidX: check

RESOURCE CONFIGURATION

3. Open colors.xml.

Add some colors like this table

name	value
greenLight	#96FD0A
textColor	#1B1B1B
titleBackground	#feffa7
textBackground	#E2E2E2
clrRed	#ff0000
clrYellow	#fff700
clrBlue	#001eff
clrGreen	#00ff15
clrOrange	#ff6f00
clrPurple	#9500ff

4. Open strings.xml. Add some strings and integers like this table

type	name	value
`<string name="name">value</string>`	app_name	APLAS COLOR GAME
	keyword	quiz@123
`<integer name="name">value</integer>`	minScore	0
	maxScore	100
	counter	10
	mintimer	0
	maxtimer	5

5. Still in strings.xml, add array string

Template:
```
<string-array name="string-name">
    <item>value1</item>
       .
       .
<string-array>
```

Name	value
	Red
	Yellow
colorList	Blue
	Green
	Orange

Name	value
	Purple

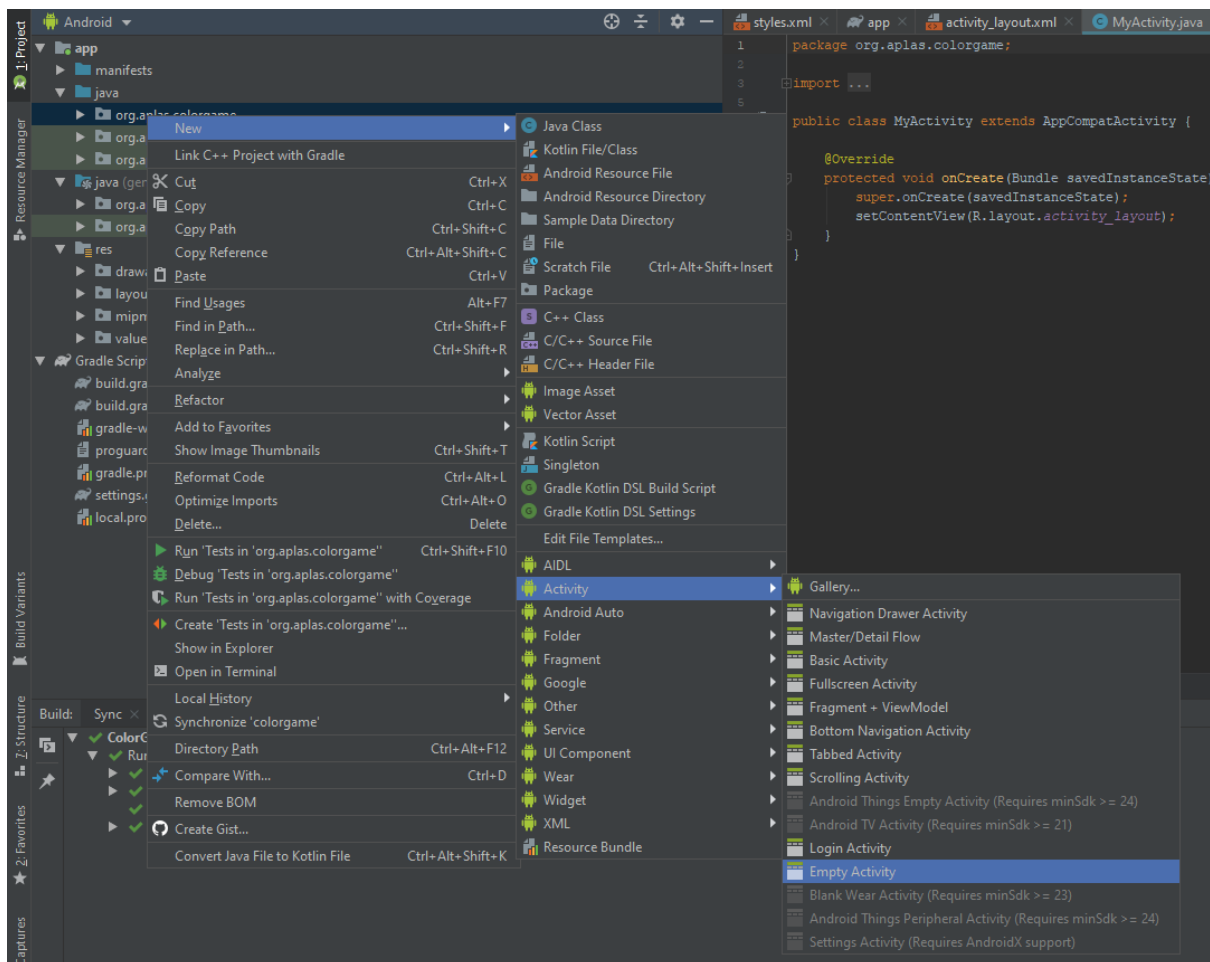| Name	value
charList	A
	B
	C
	D
	E
	F

6. Open styles.xml.
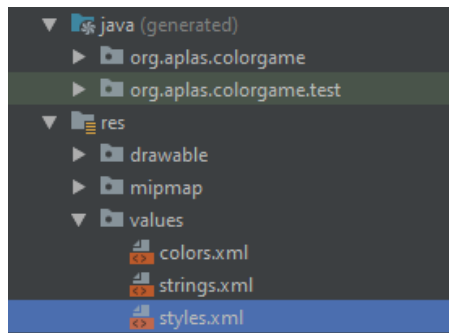
Change the "AppTheme" configuration be like this:

```
<style name="AppTheme" parent="Theme.AppCompat.Light.NoActionBar">
    <item name="android:background">#a1c8ce</item>
    <item name="android:paddingLeft">1pt</item>
    <item name="android:paddingRight">1pt</item>
    <item name="android:paddingTop">1pt</item>
    <item name="android:paddingBottom">1pt</item>
    <item name="android:textColor">@color/textColor</item>
</style>
```
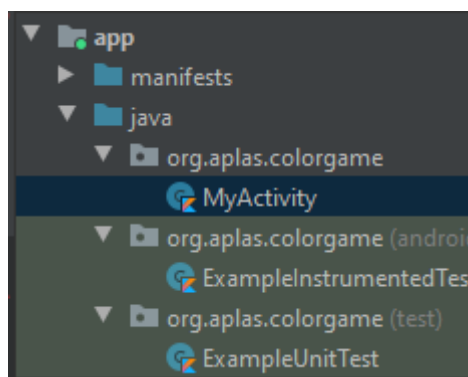
7. Create new Empty Activity with this menu.

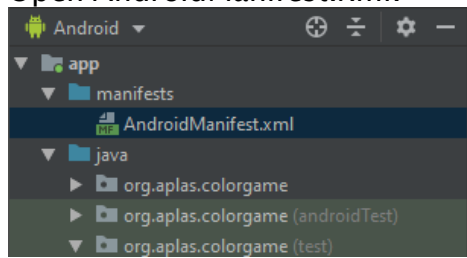**In the dialog, use this configuration (must be correct) :**
- Activity name: MyActivity
- Generate Layout File: Checked
- Layout name: activity_layout
- Launcher activity: Checked
- Backwards Compatibility: Unchecked (if appears)
- Package: org.aplas.colorgame
- Language: Kotlin

Then click **Finish**

8. Open MyActivity.kt.

9. Open AndroidManifest.xml.

Change the value of project configuration be like this:
- label: APLAS COLOR GAME
- theme: @style/AppTheme
- activity name: MyActivity
- Launcher activity: Checked
- Backwards Compatibility: Unchecked (if appears)
- Package: org.aplas.colorgame
- Language: Kotlin

10. Change the content of "build.graddle (Module: app)" file like below, then **Sync it**.

```
apply plugin: 'com.android.application'
apply plugin: 'kotlin-android'
apply plugin: 'kotlin-android-extensions'

android {
    compileSdkVersion 28
    buildToolsVersion "30.0.2"
    testOptions.unitTests.includeAndroidResources = true

    defaultConfig {
        applicationId "org.aplas.colorgame"
        minSdkVersion 24
        targetSdkVersion 28
        versionCode 1
        versionName "1.0"
        buildConfigField "int", "MIN_SDK_VERSION", "$minSdkVersion.apiLevel"
        buildConfigField "int", "TARGET_SDK_VERSION", "$targetSdkVersion.apiLevel"
        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"

    }

    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android-optimize.txt'),
'proguard-rules.pro'
        }
    }
}

dependencies {
    implementation fileTree(dir: "libs", include: ["*.jar"])
    implementation "org.jetbrains.kotlin:kotlin-stdlib:$kotlin_version"
    implementation 'androidx.core:core-ktx:1.3.2'
    implementation 'androidx.appcompat:appcompat:1.2.0'
    implementation 'androidx.constraintlayout:constraintlayout:2.0.4'
    testImplementation 'junit:junit:4.12'
    androidTestImplementation 'androidx.test.ext:junit:1.1.2'
    androidTestImplementation 'androidx.test.espresso:espresso-core:3.3.0'
```

F. Testing.

1. Copy "ElementTest.java, ResourceTest.java, ViewTest.java, TestB2AdvancedWidgetsKT011.java and TestB2AdvancedWidgetsKT011.java" file to "org.aplas.colorgame (test)" folder.
2. Right click on the "TestB2AdvancedWidgetsKT011.java" file then choose Run 'TestB2AdvancedWidgetsKT011' and click it. It may take long time to execute.

3. Get the result of your task. If passed you will get green check like below. If the test failed, you will get orange check get the messages and you must check your work again.
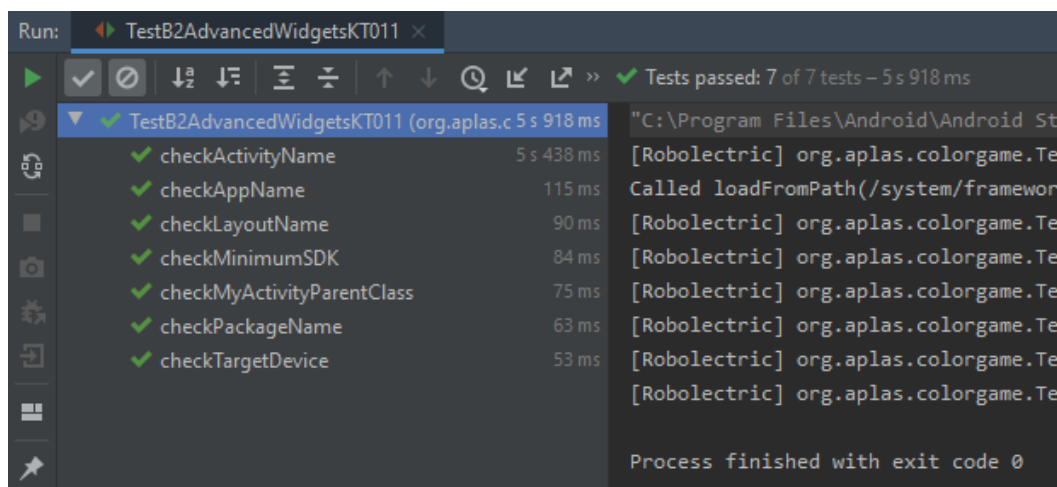
4. Right click on the "TestB2AdvancedWidgetsKT012.java" file then choose Run 'TestB2AdvancedWidgetsKT012' and click it. It may take long time to execute.

5. Get the result of your task. If passed you will get green check like below. If the test failed, you will get orange check get the messages and you must check your work again.
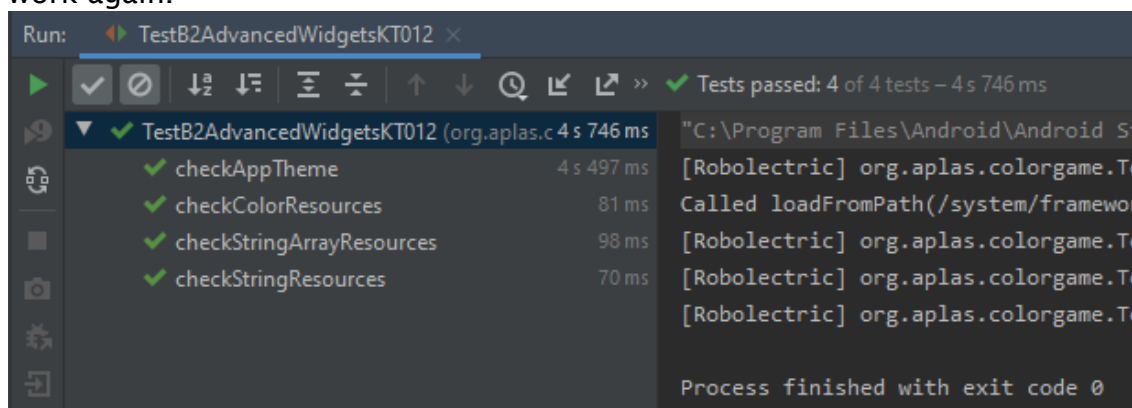
You have to try until get all green checkes and continue to the next task.