

TASK GUIDE (C1.01)

A. Objectives.

Student will start an Android project to create an Android application that contains several activities entitled MyLibrary. 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) with AndroidX library.

C. Resources.

Documents:

- Guide

Supplement files:

- btn_download.xml
- btn_edit.xml
- btn_logout.xml
- btn_open.xml
- btn_save.xml
- edittextbox.xml
- tv_main.xml
- key.jpg
- mylibrary.png

Test code:

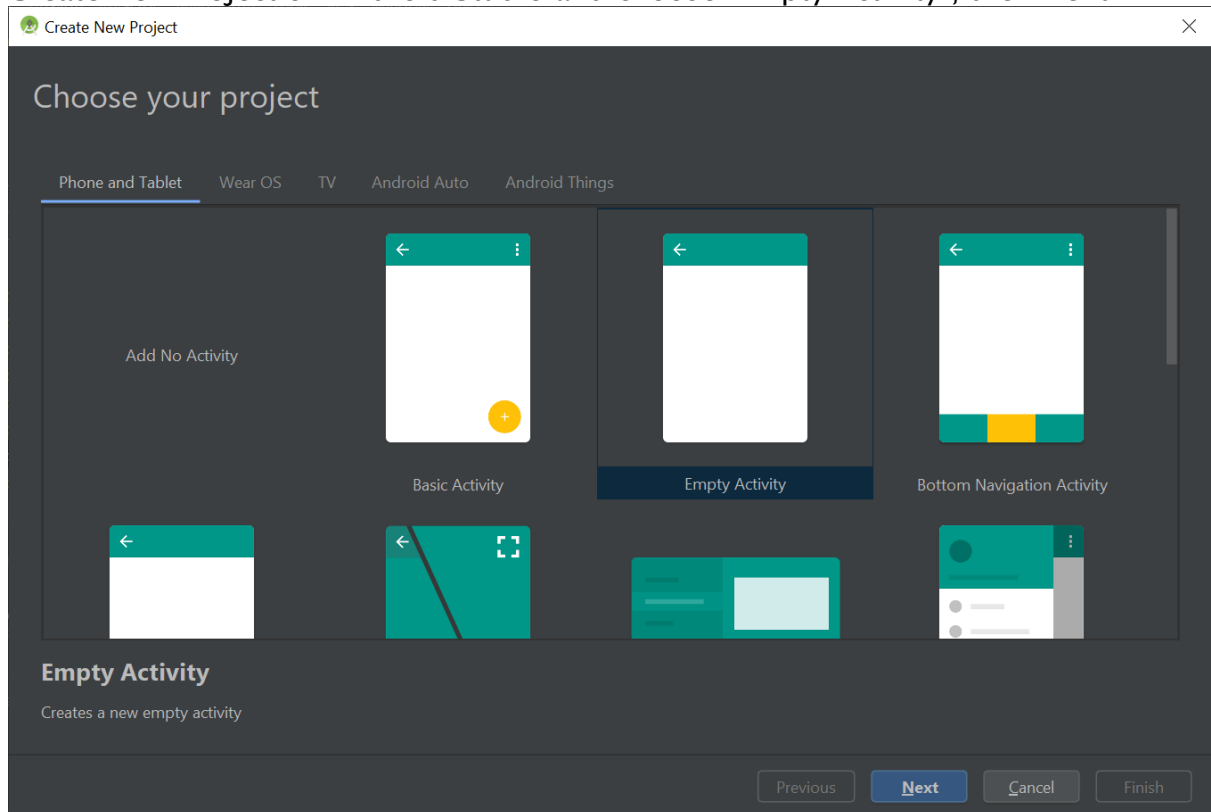
- TestC1MyLibrary011.java

D. Task Description.

Student start to create a project configuration and resource configuration.

E. Specification.

1. Create New Project on Android Studio and choose “Empty Activity”, then Next.



2. Project Configuration.

- Project Name: MyLibrary
- Package Name: org.aplas.mylibrary
- Project Location: any
- Language: Java
- Target API Level: Android 6.0 (Marshmallow)
- Support instant apps: uncheck

Then Click Finish.

3. Change the content of “build.gradle (Module: app)” file like below, then **Sync** it.

```
plugins {
    id 'com.android.application'
}

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

    defaultConfig {
        applicationId "org.aplas.mylibrary"
        minSdkVersion 21
        targetSdkVersion 28
        versionCode 1
        versionName "1.0"

        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"
    }

    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android-optimize.txt'),
'proguard-rules.pro'
        }
    }
    compileOptions {
        sourceCompatibility JavaVersion.VERSION_1_8
        targetCompatibility JavaVersion.VERSION_1_8
    }
    allprojects {
        tasks.withType(JavaCompile) {
            options.compilerArgs << "-Xlint:unchecked" << "-Xlint:deprecation"
        }
    }
    buildFeatures {
        dataBinding true
    }
    testOptions {
        execution 'ANDROIDX_TEST_ORCHESTRATOR'
    }
}

dependencies {
    implementation fileTree(dir: "libs", include: ["*.jar"])
    implementation 'androidx.appcompat:appcompat:1.1.0'
    implementation 'com.google.android.material:material:1.3.0'
    implementation 'androidx.constraintlayout:constraintlayout:2.0.4'
    implementation 'androidx.navigation:navigation-fragment:2.2.2'
    implementation 'androidx.navigation:navigation-ui:2.2.2'
    testImplementation 'junit:junit:4.13.2'
    testImplementation 'org.robolectric:robolectric:4.2.1'
    testImplementation 'androidx.test:core:1.3.0'
    androidTestImplementation 'androidx.test.ext:junit:1.1.2'
    implementation 'com.github.duanhong169:colorpicker:1.1.6'
    implementation 'com.github.duanhong169:colorpicker:1.1.6'
}
```

RESOURCE CONFIGURATION

4. Configure the necessary string resource(s)

name	value
app_name	MyLibrary
title_activity_input_data	InputDataActivity
first_fragment_label	First Fragment
second_fragment_label	Second Fragment
next	Next
previous	Previous

Note: you can add other string resource definitions by yourself if necessary.

5. Configure the necessary string array resource(s)

name	value
book_types	Fiction Magazine Non Fiction Comic

6. Configure the necessary color resource(s)

name	value
colorPrimary	#6200EE
colorPrimaryDark	#3700B3
colorAccent	#03DAC5
bgMain	#00D6EA
bgSave	#192841
btnSave	#FFFC65
btnDownload	#FBBAFF
btnOpen	#5AFFB1
lightBlue	#5AFFFF
btnAdd	#00B6CD

7. Configure the necessary drawable resource(s)

Copy all pictures in supplement folder to drawable resource folder in Android Studio:

- myLibrary.png
- key.jpg

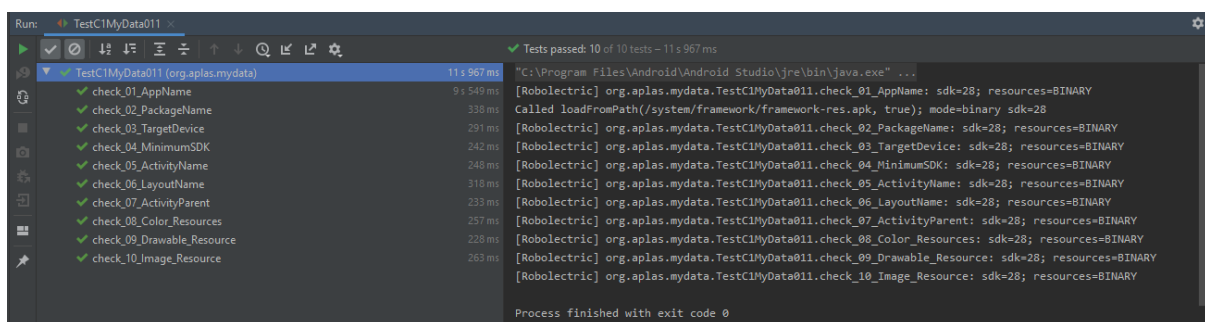
Copy all button in supplement folder to drawable resource folder in Android Studio:

- btn_download.xml
- btn_edit.xml
- btn_open.xml
- btn_save.xml

Note: you can add other image/drawable resource definitions by yourself if necessary.

F. Testing.

1. Copy “ResourceTest.java”, “ViewTest.java” and “TestC1MyLibrary011.java” file to “org.aplas.mylibrary(test)” folder.
2. Right click on the “TestC1MyLibrary011.java” file then choose Run. 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.



You have to try until get all green checkes and continue to the next task.