

INTRODUCTION TO



Kotlin



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Mobile Apps Developer

INTRODUCTION TO  **Kotlin**



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INTRODUCTION TO  **Kotlin**



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Today

- What is Kotlin?
- What is Android?
- How do Kotlin and Android work?
- Where to learn more Kotlin
- Variables, functions and lambdas
- Create a random number generator app in Android Studio







IDE & Code & API & Compile & Install & Run

Android Studio

Kotlin / Java

Android API

DEX

APK

Android OS

**IDE &
Code &
API &
Compile &
Install &
Run**

Kotlin is not Java

Null safety

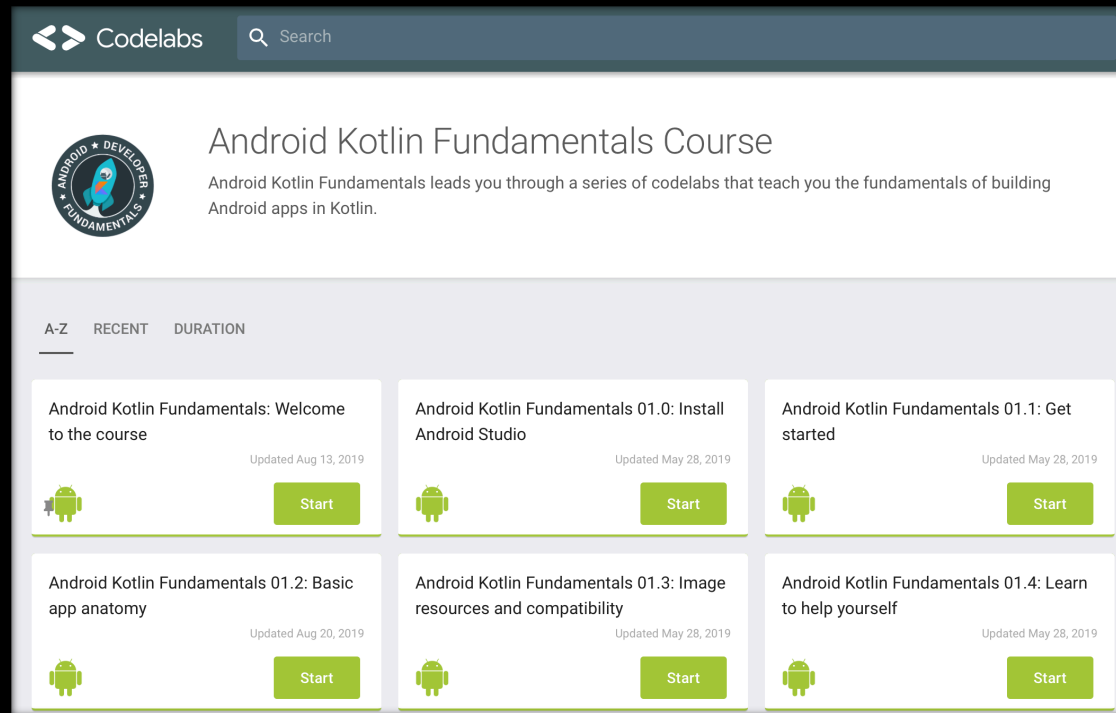
String templates

Property declaration

Lambda expressions

* No semi-colon at the end of expressions

Android Kotlin Course



The screenshot shows the Codelabs website interface. At the top, there's a header with the Codelabs logo and a search bar. Below the header, the main section is titled "Android Kotlin Fundamentals Course" with a circular logo featuring a bird and the text "ANDROID * DEVELOPER * FUNDAMENTALS". A description states: "Android Kotlin Fundamentals leads you through a series of codelabs that teach you the fundamentals of building Android apps in Kotlin." Below this, there are tabs for "A-Z", "RECENT", and "DURATION". The main content area displays a grid of six codelabs, each with a title, a description, an Android icon, and a "Start" button. The codelabs are:

- Android Kotlin Fundamentals: Welcome to the course (Updated Aug 13, 2019)
- Android Kotlin Fundamentals 01.0: Install Android Studio (Updated May 28, 2019)
- Android Kotlin Fundamentals 01.1: Get started (Updated May 28, 2019)
- Android Kotlin Fundamentals 01.2: Basic app anatomy (Updated Aug 20, 2019)
- Android Kotlin Fundamentals 01.3: Image resources and compatibility (Updated May 28, 2019)
- Android Kotlin Fundamentals 01.4: Learn to help yourself (Updated May 28, 2019)

<https://codelabs.developers.google.com/android-kotlin-fundamentals/>

The bare minimum

Variables, Functions and Lambdas... Oh my!

Variables

Declare using var or val

```
val helloWorld: String = "Hello World!"
```

Functions

Declare using fun keyword

```
private fun getNumber() {  
    val randomInt: Int = Random.nextInt(6) + 1  
}
```

Lambdas

A type of object that holds a block of code

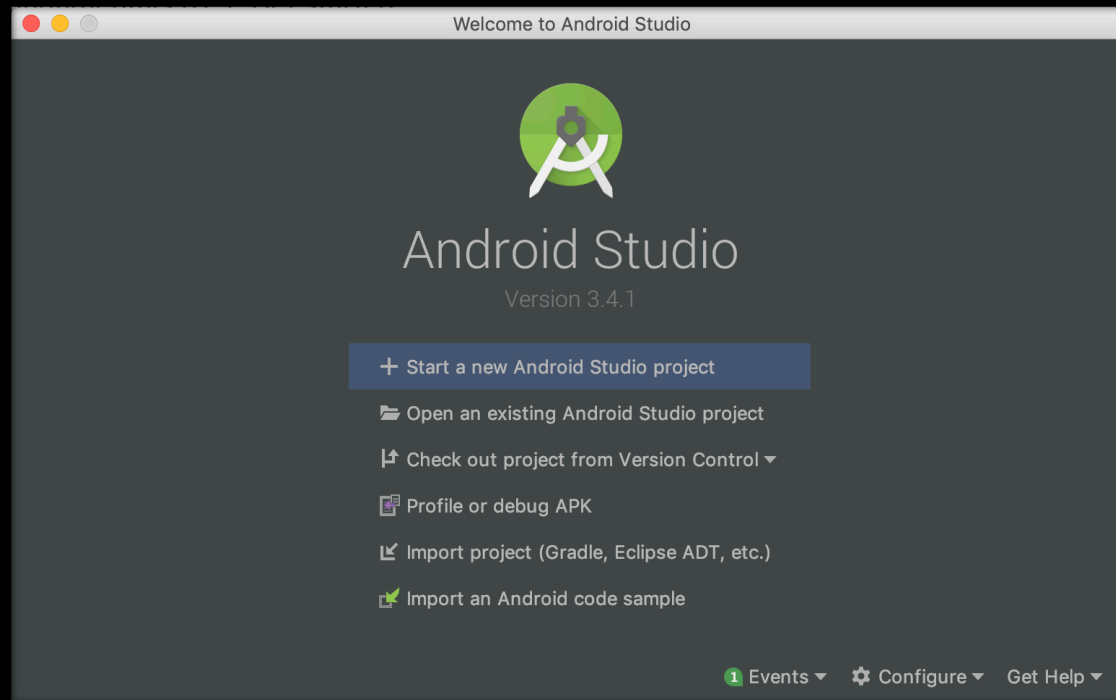
```
{ getNumber() }
```


Random Number Generator App

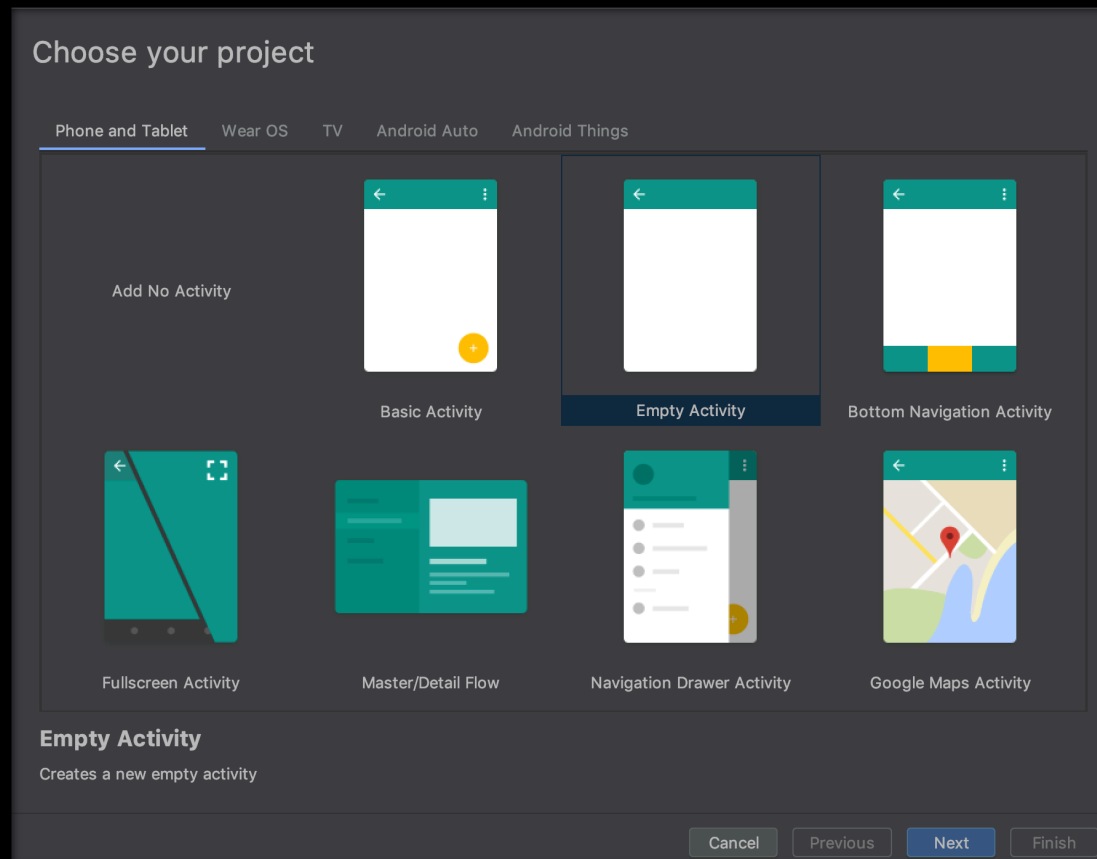
We'll create an app that will generate a random number
each time we click a button

In this app we will declare variables, write a function and
pass a lambda as a value

Start a new Android Studio project




Create an empty Activity



Configure your project

Configure your project



Empty Activity

Creates a new empty activity


Name
WWC ATX Diversity Hackathon

Package name
com.mirellabatista.wwcatsbydiversityhackathon

Save location
/Development/Kotlin/WWC

Language
Kotlin

Minimum API level
API 19: Android 4.4 (KitKat)

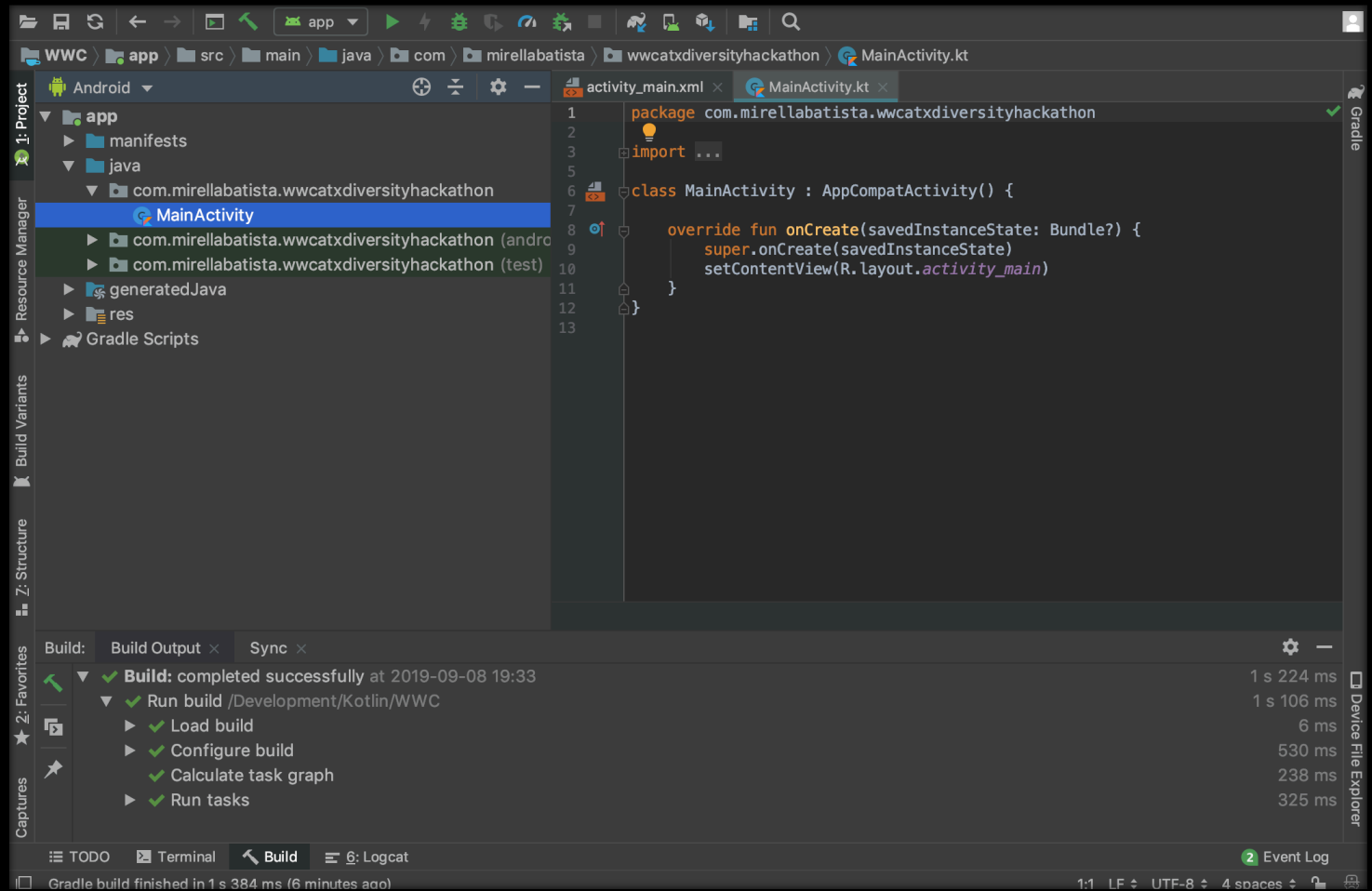
 Your app will run on approximately 95.3% of devices.
[Help me choose](#)

☐ This project will support instant apps

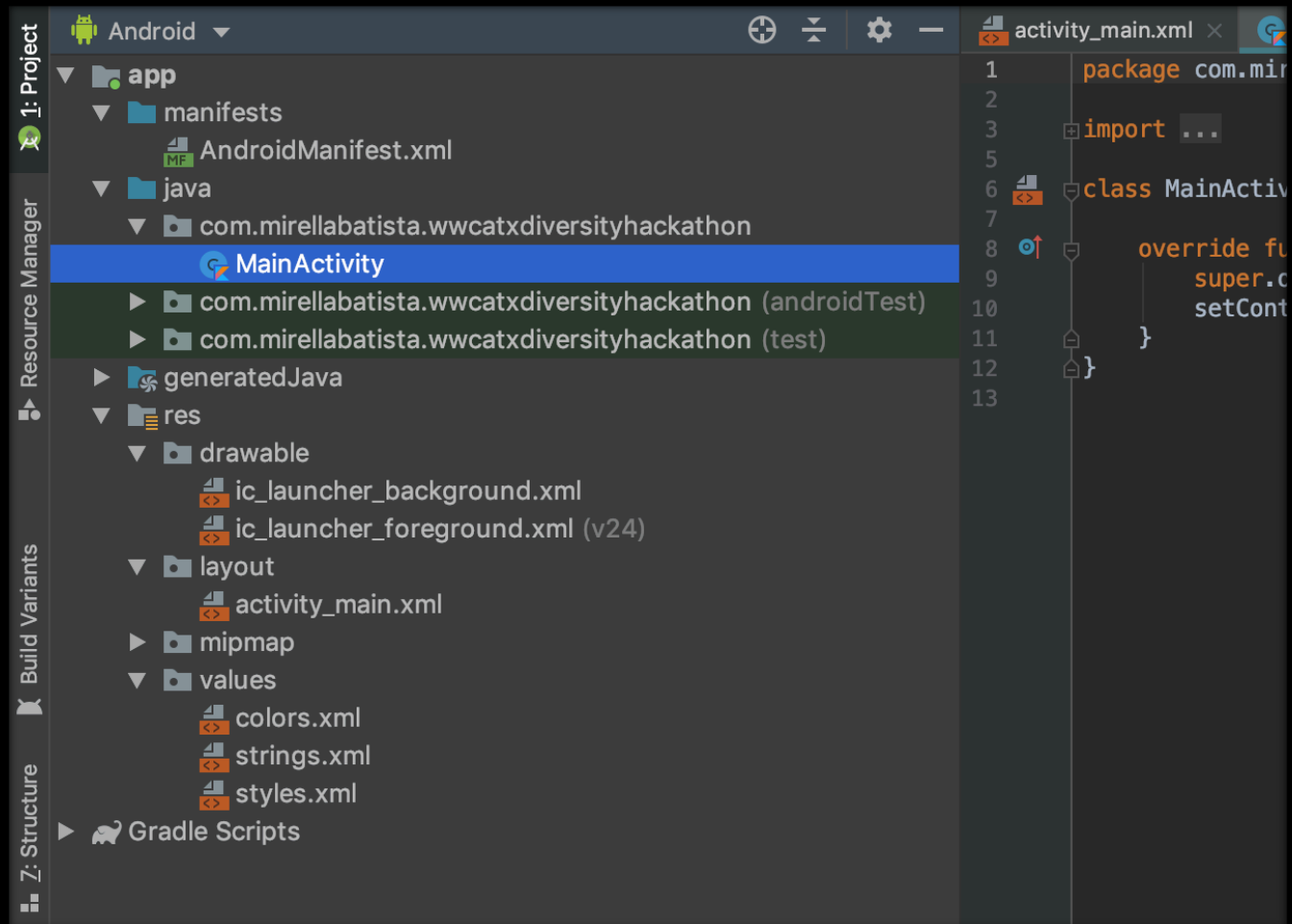
☒ Use android.* artifacts

Cancel Previous Next Finish

Quick tour of Android Studio

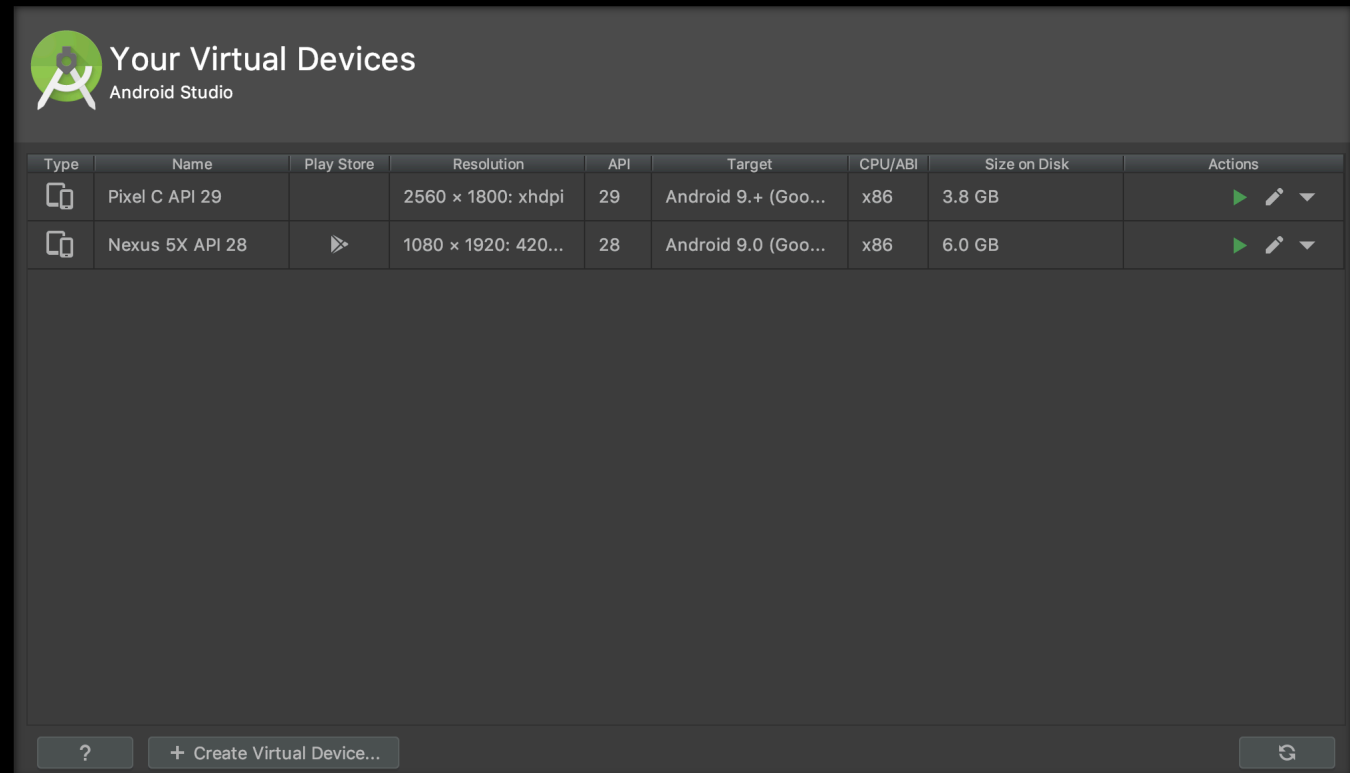


Project files



About the AVD emulator

Select Tools > AVD Manager



Configure a virtual device

Select Tools > AVD Manager

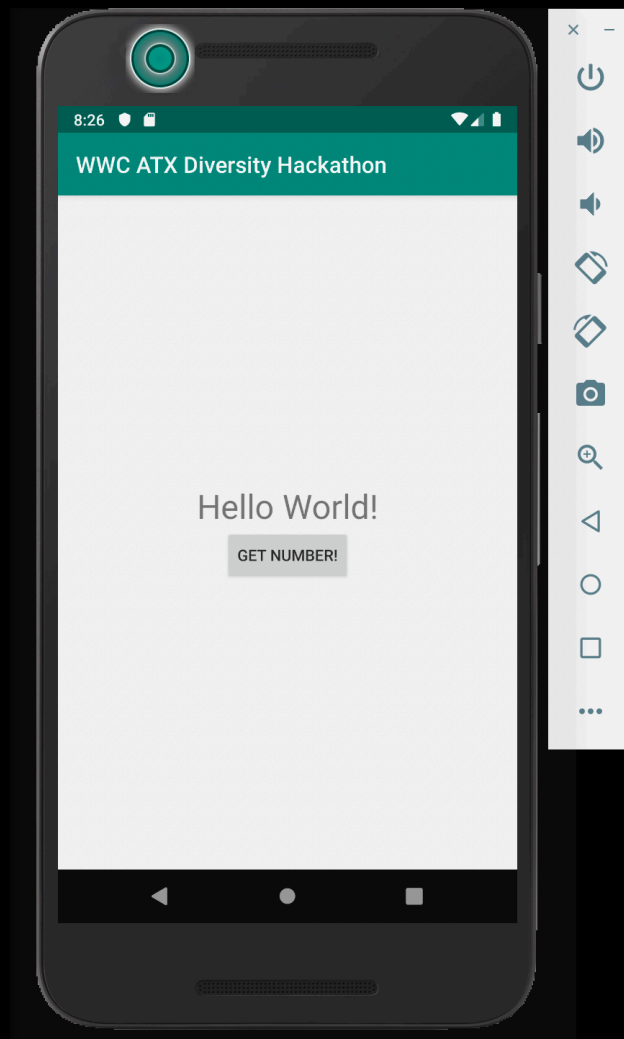
Click +Create Virtual Device

Under category Phone, select Nexus 5X or Pixel XL

Select a system image which you have installed

Finish and run the app on the virtual device

Run the
app in a
virtual
device



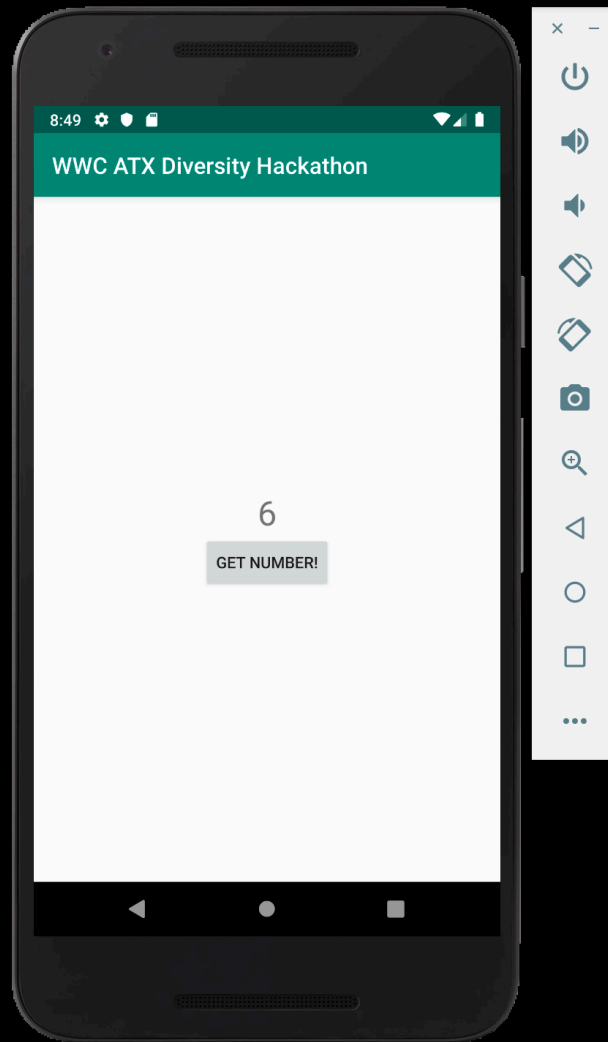
Add a button and a text field

```
activity_main.xml x
1  <?xml version="1.0" encoding="utf-8"?>
2  <LinearLayout
3      xmlns:android="http://schemas.android.com/apk/res/android"
4      xmlns:tools="http://schemas.android.com/tools"
5      android:layout_width="match_parent"
6      android:layout_height="wrap_content"
7      android:layout_gravity="center_vertical"
8      android:orientation="vertical"
9      tools:context=".MainActivity">
10
11      <TextView
12          android:id="@+id/show_number_text"
13          android:layout_width="wrap_content"
14          android:layout_height="wrap_content"
15          android:layout_gravity="center_horizontal"
16          android:textSize="30sp"
17          android:text="Hello World!"/>
18
19      <Button
20          android:id="@+id/get_number_button"
21          android:layout_width="wrap_content"
22          android:layout_height="wrap_content"
23          android:layout_gravity="center_horizontal"
24          android:text="Get number!"/>
25  </LinearLayout>
```

Let's add Kotlin

```
MainActivity.kt x
1 package com.mirellabatista.wvcatsdiversityhackathon
2
3 import androidx.appcompat.app.AppCompatActivity
4 import android.os.Bundle
5 import android.widget.Button
6 import android.widget.TextView
7 import java.util.*
8
9 class MainActivity : AppCompatActivity() {
10
11
12
13     override fun onCreate(savedInstanceState: Bundle?) {
14         super.onCreate(savedInstanceState)
15         setContentView(R.layout.activity_main)
16         val getNumberButton: Button = findViewById(R.id.get_number_button)
17         getNumberButton.setOnClickListener { getNumber() }
18     }
19
20     private fun getNumber(){
21         val randomInt: Int = Random().nextInt( bound: 6) + 1
22         val showNumberText: TextView = findViewById(R.id.show_number_text)
23         showNumberText.text = randomInt.toString()
24     }
25 }
26
```

Test
the app
in a
virtual
device



Questions?

Thank you!

RESOURCES

<https://kotlinlang.org>

<https://kotlinlang.org/docs/reference/comparison-to-java.html>