

Lab Assignment 1

(updated Jan 12th, 2022)

Overview:

Create an application that will display a pseudo-random number from 1 to a maximum set by the user.

Assignment Requirements:

1. Create a new Android Application using the EMPTY Activity Template. Select API 28 (Android 9.0) as the Minimum SDK. You **must** use a domain naming pattern of **ca.mohawk.yourname** when you create your project (last name is sufficient). You must also include the following statement of authorship in a comment at the top of your MainActivity java code:

**I, John Doe, 000123456 certify that this material is my original work.
No other person's work has been used without due
acknowledgement.**

(Replace with your own name and student number)

2. The Application should be named "Lab1", however the displayed name ("**app_name**") should be changed to the following, with your name and student number:

Lab 1 - Your Name 000123456

3. Create a Layout with the following elements:
 - a. TextView prompt "Enter a Value:"
 - b. EditText field for input that accepts only numbers
 - c. A Button labelled "RANDOM" or "ROLL"
 - d. a TextView for the output of the random number.
4. When the Button is clicked:
 - a. Determine the maximum value (get text from the EditText field)
 - b. Generate a random number within the correct range
 - c. Display the result.
5. Testing / Preventing Crashes:
 - a. Initialize your values - either by using reasonable defaults in your layout, or by setting the initial values in your *onCreate()* method.
 - b. Try to enter a non-numeric value. You can restrict the EditText to accept only numbers.
 - c. Try to enter a 0 (zero). Make sure your program tests for this case.
 - d. Try to enter nothing (blank field). Make sure your program tests for this.
 - e. Make sure your program generates numbers between 1 and the maximum, inclusive (i.e. a maximum of "6" should simulate a die roll from 1 to 6).

Example display:



Resources:

- Android Developer Guide - Buttons
 - <https://developer.android.com/guide/topics/ui/controls/button.html>
- Android Developer - Random class
 - <https://developer.android.com/reference/java/util/Random.html>
- Converting text input fields to an integer (one of many methods) :
 - Assuming `input` is an instance of an EditText object:
 - `int` inputValue = Integer.parseInt("0" + input.getText().toString());
 - Using "0" + is one way to prevent a null exception in this case.
 - Using a try { ... } catch block is more robust

Demonstration Video

Record a 25-45 second demonstration video using desktop capture software that illustrates the usage and development of your application. In your video:

- Using the layout tool briefly explain your GUI's design.
- Demonstrate the use of your app. Include legal and illegal example inputs.
- You must use a microphone to record your answers along with desktop capture.
- Upload your video to a file sharing service like YouTube.
- Edit your video if it is too long. Keep it between 25secs and 45secs. See:
 - How to Edit Videos with YouTube. <https://youtu.be/84uLZ2pPebI>

Submission

- At the top of your MainActivity.java file Include a link to your demonstration video in a comment below your statement of authorship.
- Use Android Studio to Export your project, including the .java code, related .xml files, and all other project elements to a ZIP archive.
- Upload your .zip file to myCanvas by the deadline.