**Lab 2: Producing an App to Create RGB Colors**

In this activity, we will look into a scenario that uses validation. Suppose you have been tasked with creating an app that shows how the RGB channels of Red, Green, and Blue are added to the RGB color space to create a color. Each of the RGB channels should be added as two hexadecimal characters, where each character can be a value of 0-9 or A-F. The values will then be combined to produce a 6-character hexadecimal string that is displayed as a color within the app.

The aim of this activity is to produce a form with editable fields in which the user can add two hexadecimal values for each color. After filling in all three fields, the user should click a button that takes the three values and concatenates them to create a valid hexadecimal color string. This should then be converted to a color and displayed in the UI of the app.

**The following steps will help you to complete the activity:**

1. Create a new project called **Colors**
2. Add a title to the layout constrained to the top of the layout.
3. Add a brief description to the user on how to complete the form.
4. Add three material **TextInputLayout fields** wrapping three **TextInputEditText** fields that appear under **Title**. These should be constrained so that each view is on top of the other (rather than to the side).  
   Name the **TextInputEditText fields** **Red Channel, Green Channel,** and **Blue Channel**, respectively, and add a restriction to each field to only be able to enter two characters and add hexadecimal characters.
5. Add a button that takes the inputs from the three-color fields.
6. Add a view that will display the produced color in the layout.
7. Finally, display the RGB color created from the three channels in the layout.

The final output should look like this (the color will vary depending on the inputs):

A screenshot of a phone

Description automatically generated with medium confidence

**Figure 1.25: Output when the color is displayed**

**Note:** When loading all completed projects from the GitHub repository for this course into Android Studio for the first time, do *not* open the project using File | Open from the Top menu. Always use File | New | Import Project. This is needed to build the app correctly. When opening projects after the initial import, you can use File | Open or File | Open Recent.

[Activity 1 Producing an App.docx](https://canvas.seattlecolleges.edu/courses/13567/files/12591689?wrap=1)[Download Activity 1 Producing an App.docx](https://canvas.seattlecolleges.edu/courses/13567/files/12591689/download?download_frd=1)

**Submission requirement**: *You are to provide a complete screenshot of your step-by-step application in a word document and a zip file of your code. Push your project files to a new github.com repo and submit the GitHub link. Create a 3 to 5-minute LOOM video (*[*https://www.loom.com/)Links to an external site.*](https://www.loom.com/))*in which you explain the execution of your programs. Be sure to address any challenges encountered and new information learned while completing this assignment. Be sure to test your results carefully.*