



CSE215L: Programming Language II Lab

Lab Final Exam

Total Marks: 20

Marks are indicated by numbers enclosed by square brackets to the right side.

Consider the following UI Mockup:

The mockup shows a window titled "YouTube Subscriber Count Tracker" with standard OS window controls (minimize, maximize, close). On the left is a placeholder for a channel avatar, represented by an orange icon of a person and mountains. To the right of the avatar are five input fields: "First Name", "Last Name", "YouTube Channel Name", "Channel Creation Date" (which is a date picker showing "31"), and "Current Subscriber Count". Below these fields is a "Channel Avatar" label and a "Choose Avatar" button. At the bottom of the form are two buttons: "Save Data" and "Clear Form".

Frontend:

- You have four TextFields, one DatePicker, three Buttons and one ImageView node on the form.
- When the user clicks on the **Choose Avatar** button, the File Chooser dialog box should appear and allow the user to select an image for the **Channel Avatar** field.
- **Save Data** saves the data in the backend in any data structure of your choice (ArrayList, Arrays, HashSets etc) **after data validation**. Refer to the **Validation section below** for details on how to validate the data.
- **Clear Form** resets every UI element to their initial states.

Backend:

Create a **YoutubeSubscriberCount** class that has the following data fields:

- **firstName** (String)
- **lastName** (String)
- **channelName** (String)
- **channelCreationDate** (LocalDate)
- **currentSubscriberCount** (long)
- **pathToChannelAvatar** (String)

You may have getter and setter methods as you may desire.

The **toString()** method should return the following representation of the object (**including** the hyphens at the top and bottom):

Channel Name: <channelName>

Sub Count: <currentSubscriberCount>

Channel Creation Date: <channelCreationDate>

Validation:

- **None of the data fields can be null/empty.**
- **firstName** and **lastName** should be at least 5 characters long.
- **channelName** must be at least 10 characters long.
- **currentSubscriberCount** should be a valid, positive **long number**.

If any of the data do not match the above validation rules, print out an error message to the console, such as “**Name must have at least 5 characters!**” and so on.

Ideal Application Behavior:

- User enters data into the fields on the UI. [5]
- Data is validated according to the validation rules. If errors exist, it is displayed in the console. [5]
- Once data is deemed valid, a new **YoutubeSubscriberCount** object is created and added to a data structure of your choice. [5]
- The updated data structure with the newly added element is printed out to the console element by element. [5]