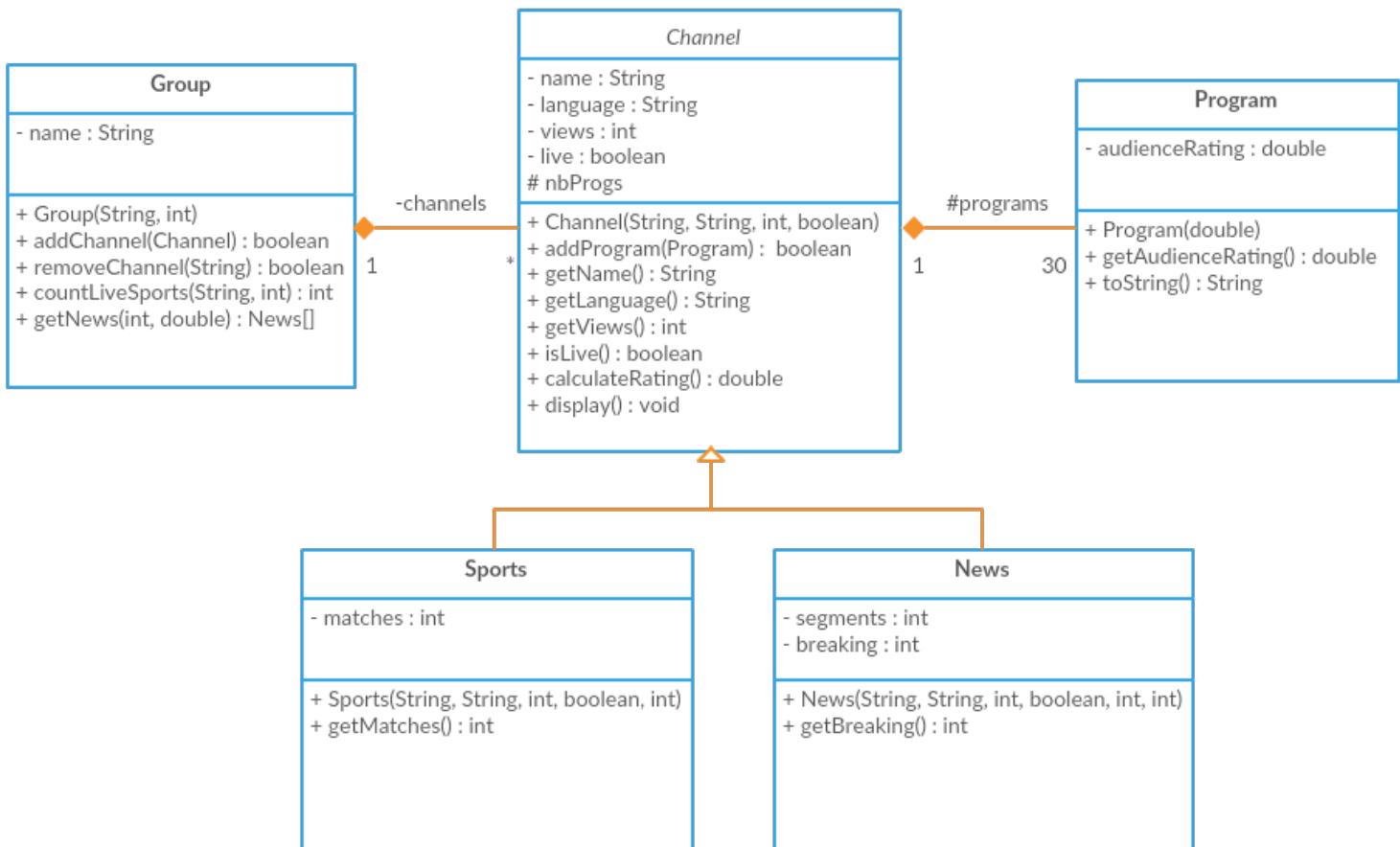


King Saud University
 College of Computer and Information Sciences
 Department of Computer Science
 CSC113 – Computer Programming II – Abstract Classes Lab – Fall 2019



Program class:

- **Attributes:**
 - **audienceRating:** the audience rating of the program
- **Methods:**
 - **Program(double audienceRating):** constructor
 - **getAudienceRating():** returns the audience rating of the program
 - **toString():** returns a string representing the info of the program

Channel class:

- **Attributes:**
 - **name:** the name of the channel
 - **language:** the language of the channel
 - **view:** the number of views for the channel
 - **live:** attribute that indicates if the channel is live or not
 - **nbProgs:** number of programs in the channel
- **Methods:**
 - **Channel(String name, String language, int views, boolean live):** constructor

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- ***addProgram(Program p)***: adds program *p* to the channel
- ***getName()***: returns the name of the channel
- ***getLanguage()***: returns the language of the channel
- ***getViews()***: returns the views of the channel
- ***isLive()***: returns whether the channel is live or not
- ***calculateRating()***: calculates the rating of the channel in the following way:
 - ***Sports***: views / matches * 2
 - ***News***: (views / breaking) + (\sum audienceRating of all programs in the channel / segments)
- ***display()***: prints out the info of the channel and its programs

Sports class:

- **Attributes:**
 - ***matches***: the number of matches the channel covers
- **Methods:**
 - ***Sports(String name, String language, int views, boolean live, int matches)***: constructor
 - ***getMatches()***: returns the number of matches in the channel

News class:

- **Attributes:**
 - ***segments***: the number of news segments in the channel
 - ***breaking***: the number of breaking news the channel covers
- **Methods:**
 - ***News(String name, String language, int views, boolean live, int segments, int breaking)***: constructor
 - ***getBreaking()***: returns the number of breaking news in the channel

Group class:

- **Attributes:**
 - ***name***: the name of the group
- **Methods:**
 - ***Group(String name, int size)***: constructor
 - ***addChannel(Channel c)***: adds channel *c* in the group if there's space and it's not already there
 - ***removeChannel(String name)***: removes the channel *name* if it exists and shifts the rest of the elements if needed
 - ***countLiveSports(String language, int matches)***: returns the number of sports channel that are live and in *language* with matches greater than or equal to *matches*
 - ***getNews(int breaking, double rating)***: returns an array of News channels having breaking news greater than *breaking* and rating at least *rating*

Exercise 1: Translate into Java code all the previous classes.

Exercise 2: Write a main method and test all the previous functionalities.