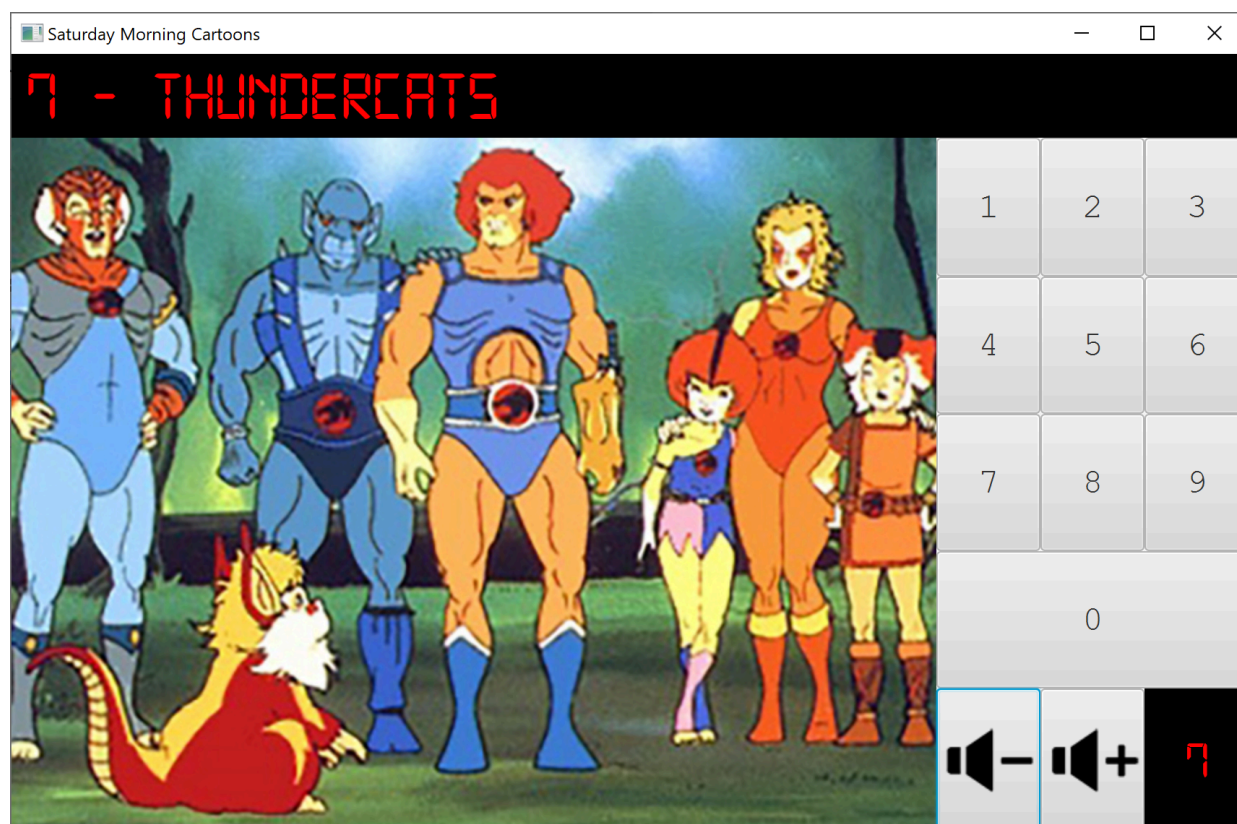


# TV Set

## Goals of the Assignment

The goal of this assignment is to write a JavaFX GUI that mimics an old-fashioned TV set that displays static images (not video) and plays sounds. As always, you are expected to practice good software engineering, including the Git workflow. You **do not** have to unit test your GUI code. Read this document ***in its entirety*** before asking for help from the course staff.



*An example of a JavaFX GUI that mimics a TV set. You **do not** have to match the look and feel of this example exactly!*

## Activities

1. A `Channel` is a helper class that can be used to represent a single television channel. It should meet at least the following requirements:
  - a. It is created with a description, the path to an image file, and the path to an audio file.
  - b. It should include accessors for the description and the `Image`.
  - c. It should include methods to start or stop playing its `MediaPlayer`.
  - d. It should include methods to get and set the [volume](#) on the `MediaPlayer`. The volume may be set to a value from 0.0 (muted) to 1.0 (max).

- e. It should include methods to increase and decrease the volume on the `MediaPlayer` in increments of 0.1, e.g. if the volume is currently 0.5 it may be increased to 0.6 or decreased to 0.4.
2. Next, you will create a JavaFX GUI of your own design that mimics a TV Set. While you are encouraged to flex your creative muscles, your GUI must meet at least the following requirements:
    - a. There must be some kind of control(s) that allows the user to change the channel displayed by the TV Set. Changing to one of 10 different channels (numbered 0-9) should do at least the following:
      - i. Stop any audio that is currently playing.
      - ii. Display a description including the channel number and name of the TV show of your choice.
      - iii. Display an image from the TV show.
      - iv. Play an audio clip from the TV show.
    - b. There must be some kind of control(s) that allow the user to change the volume. Changing the volume should:
      - i. Adjust the volume of any audio that is currently playing.
      - ii. If the channel is changed, the volume should stay at the same level. In other words, if the current channel is playing audio at 0.5 (half volume), changing the channel should play audio at the same level.
      - iii. Prominently display the current volume somewhere in the GUI on a scale from 0 (muted) to 10 (max).

## Suggestions & Hints

Consider the following suggestions & hints when implementing your solution.

1. You may use any [compatible audio file](#) for the audio clips that are played by your TV Set. If you do not have any readily available, you may use the music and images provided to you on MyCourses under *Content -> Course Materials -> Unit 4*.
  - a. If you choose to use your own TV shows, you should try to make sure that the images are all the same size. The images provided to you are 640x480 pixels.
  - b. You can find lots of TV theme songs here: <http://www.televisiontunes.com>
  - c. **Please note** that there is a known bug in the JavaFX Media Player such that it will not play an MP3 file that has album artwork embedded in the file. You may circumvent the bug by using a program like WinAmp or iTunes to remove the album artwork or by choosing a different audio file.
2. You are encouraged to consider making additional helper classes as needed, especially for event handling.
3. You may enhance the features of your TV Set provided that it at least meets the requirements listed above.