Code Challenge Instructions

Problem:

Develop an object-oriented C++ application that computes the average luminance of each video file in a collection of video files, and the minimum, maximum, mean and median value across all files.

The application must accept the following two command-line arguments:

- The path to a directory that contains the video files to process
- A number indicating the number of threads to use to process the files (in additional to the application's main thread)

For example: `calclum /tmp/videoFiles 8` would process the video files in the /tmp/videoFiles directory using 8 video processing threads.

The main thread must create the specified number of threads and then manage the distribution of work.

The level for each file should be printed to the console as soon as it is computed, and the min, max, mean and median should be displayed once all files have been processed.

Sample video files are available at:
https://drive.google.com/drive/folders/0B4Lp27ekDXmdY0t2cktMN2tIWEU?usp=sharing

Luminance is to be computed for all the color planes of an image. The color plane luminance levels should be aggregated to a frame level by taking an average. The video/sequence level should be computed by taking an average of the frame levels.

The source code repository should be pushed to a GitHub repository. Provide the binary and usage information in a README file.

You are free to use any existing open source library.

Delivery deadline: November 27, 2017

Please contact Maria Arshad (maria.arshad@ssimwave.com), Peter Olijnyk (peter.olijnyk@ssimwave.com) and/or (kaiwen.ye@ssimwave.com) for questions and code submission.