**CSC 745 Advanced Multimedia Programming**

**Exercise No. 3, September 6, 2018**

**Download videos under program control**

**Goal**

Learn how to download videos from the internet

**Background**

In most cases, when you want to reference a video, you can embed its link. There are times, however, when you want to capture the video and serve it locally – for example, when you might not have internet access. In this exercise, you will explore how to use pytube, a Python module for downloading video files.

**Procedure**

1. Find the pytube documentation at <https://python-pytube.readthedocs.io/en/latest/>. Navigate to a YouTube video (keep it relatively short – don’t select the India vs Bangladesh 2018 T20 Final Match Full Highlight, for example, which is more than 30 minutes long.
2. Create a YouTube object, using your chosen video. Print the title, the thumbnail url, and the media formats.
3. Download the first stream listed for your video. Can you open it and watch it in a local media player? Yes
4. Look again at the streams available for your video (choose another video if you’re getting bored with the one you chose). What is the difference between DASH and progressive streams? You don’t have to write it down – but it’s likely to be on a future quiz. List all the DASH streams. Now list all the progressive streams. List all the streams that contain only an audio track. List all the MP4 streams. Download a progressive stream at 720p and one at the lowest resolution available (144p, if possible). Can you see a difference in quality when you watch them on your local media player? What is the difference in file size? Download an audio-only stream, if one is available. How does its file size compare with the others?
5. Write a program to allow a user to download an mp4 YouTube video. Enable the user to provide a url and a target directory and to specify whether to download an audio only or a progressive track. If there is no track meeting the user’s preference, then print a message and download an alternative (if the user specified audio only, then download the lowest resolution mp4 file). If there are captions available, list the languages that are available and allow the user to choose which language to download (*none* indicates the user does not want to download the captions). Store the captions in srt format.