YouTube Video Search Tool

This tool provides a simple user interface to conduct an automated video search on YouTube, based on given keywords. Tool has four main capabilities. These are 1) Keyword management, 2) Video entry retrieval through YouTube Data API, 3) Video filtering and 4) Exporting retrieved videos in HTML format.

Keyword Management

Keywords may be entered manually or loaded from a text file that contains one keyword per line. Once user load a new keyword file, all previous keyword entries will be removed if user checked Overwrite checkbox. But it is possible to add/remove keywords manually even after loading a keyword file. As shown in the Figure 1, user can add keywords manually by using "Add" button or load from keyword file by using "Load specified file" button. It is possible to remove selected keywords by using "Delete Selected" or empty the keyword list with "Delete all" buttons.
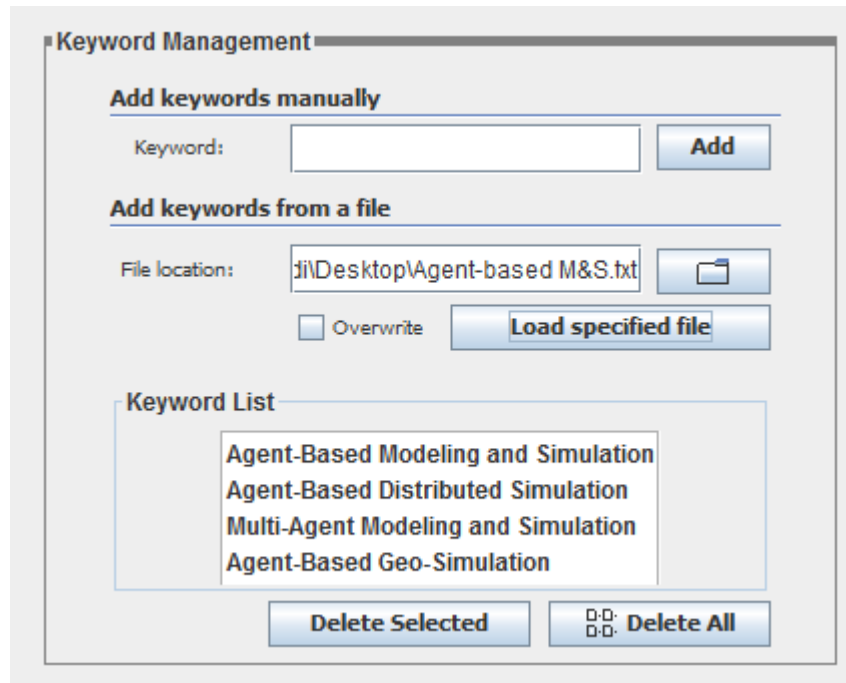

Figure 1: Keyword interface

Video Entry Retrieval

Here below, you will see the steps how searching is accomplished.

1. For each keyword in the keyword list:

   1. 1. Call YouTube Data API search function with specified search options video quality and video length. Figure 2 illustrates search options interface.
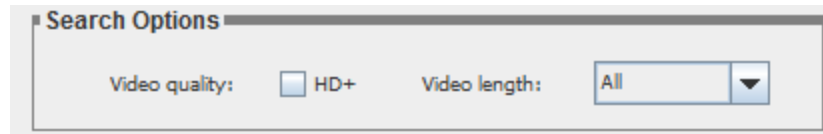
Figure 2: Search options interface

YouTube Data API allows getting 50 results per run and only returns first 1000 results for a keyword. Due to this limitation, Step 1.1 is repeated 20 times by selecting each 50 results sequentially from 1-50 … to 951-1000.

1.2. Each entry is saved on memory with the following properties: Title, Description, Author, YouTube Video ID, Duration and Thumbnail URL.

Video Filtering

YouTube API's search options are limited. This tool provides another level of filtering for the video results you already get. This additional filtering allows user to select videos that are in certain length, i.e. between 4 and 6 minutes length. It also filters out videos which don't contain any of the related keywords in their title or description. This keyword file should be provided by the user, it is not the same as search keywords.
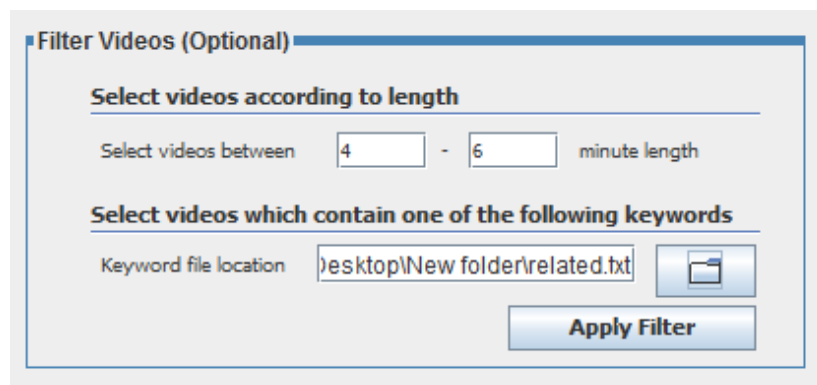

Figure 3: Filtering options interface

Exporting

In the previous step, video entries are saved on memory for each keyword. Now, user needs to specify an export folder. You may include thumbnails of videos by using the "Include thumbnails" checkbox or combine all the video results into a single HTML file otherwise you will have separate HTML file for each keyword.
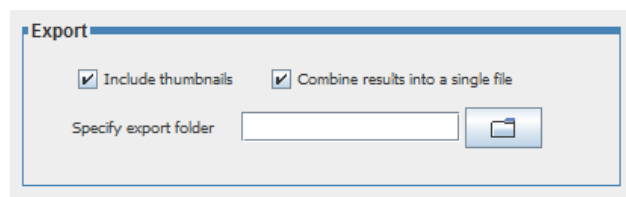

Figure 4: Export options interface

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When you visit export folder you will see an index.html file. It is the root file of each video file. Figure 5 shows list of keywords in index.html

Video Index

Keyword	Number of Videos
DEVS	322
Bayesian Networks	40
Petri Nets	13
Markov-chain Modeling	18
Discrete-Event Simulation	96
Object-Oriented Discrete-Event Simulation	0
Network simulation	328
Trace-based Simulation	11

Figure 5: Sample index file

If you visit each keyword folder separately you will see following elements.

- *list.html:* HTML file that contains list of the videos, each one listed in a row.

- *style.css:* Stylesheet file for list.html

- *packed.js:* Javascript file for list.html

- *images:* Folder that contains thumbnails

Sample *list.html* file is illustrated in Figure 6.

Discrete-Event Simulation

ID	Title	Description	Author	Duration	Thumbnail
1	Simulating a Queue: Basic Discrete Event Simulation	In this video I briefly describe a short program to simulate a single server queue (the python file can be found here: goo.gl and at the github repo here: github.com The video discussing variability in queueing systems is here: youtu.be There is in fact an entire python library for discrete event simulation but I'm afraid never used it: simpy.sourceforge.net	Vincent Knight	04:37	
2	Restaurant Simulation – Discrete Event QSR Simulation	Discrete event restaurant simulation – A QSR restaurant has been modeled utilizing a computer simulation. The model includes front counter and drive thru guests	TheLaborGuru	02:34	
3	Discrete Event Video Lecture 1.avi		hankgrant1	04:58	
		XJ Technologies is a leading provider of dynamic simulation tools, technologies and			

Figure 6: Sample video list for the keyword Discrete-Event Simulation

This tool was originally developed for M&S Knowledge Repository, ACM SIGSIM. Software is written by Hamdi Kavak, student member of MSI Lab and HD Lab, VMASC. Other student members Olcay Sahin and Matthew Haase have contributed on this project.