Articulate Project
Annotation Tools Guide

March 31, 2015

1 Introduction

For our annotation purposes, we require just two tools for setup. More details are described in the rest of this document.

- ANVIL - video annotation tool
- FFmpeg - multimedia conversion tool

2 FFmpeg Setup

2.1 Overview

Before supplying a video file to ANVIL, it must be converted to H263 codec format. The FFmpeg tool enables us to accomplish this.

2.2 Installation

Please click here and select the appropriate download and then install it.

2.3 Tutorial

In order to convert a movie file format, the FFmpeg tool offers command line execution, as described here. For example, the following command converts an ".avi" video to ".mpg":

```
ffmpeg -i source.avi target.mpg
```

2.4 ANVIL Video Format

The following FFmpeg command-line execution successfully converts video files to an ANVIL-compatible format:

```
ffmpeg -i input.mp4 -vcodec h263 -acodec pcm_s16be -ac 2 -ar 32000 -s 352x288 -r 25 -ab 32k output.mov
```

The significance of this command is described below:

input.mp4: input file name
output.mov: output file name.
video codec: H263
audio codec: pcm wav, signed 16-bit Big-Endian
audio channels: 2
audio sampling frequency: 32000 Hz
screen size: 352x288
output frame rate: 25 frames per second
output audio bit rate: 32000 bits per second

3 ANVIL Setup

3.1 Overview

The ANVIL tool assists in video annotation activities. It must be supplied with a coding scheme (referred to as a specification file in ".xml" format) and the video file on which the annotation will be done.

Once the coding scheme and video are supplied to ANVIL, then the user will create a new ".anvil" file and begin annotation. Note that multiple ".anvil" files can be associated to the same coding scheme.

3.2 Installation

The ANVIL tool is free and can be downloaded and installed by following the instructions here

3.3 Tutorial

Once installed, the next step is to become familiar with use of the tool. Fortunately, tutorial videos have already been created for this purpose and can be viewed by clicking here followed by clicking on the "Video Tutorials" link.

Note that the video referring to "Transcribing speech with PRAAT" can be ignored (we will not be using it for our annotations).

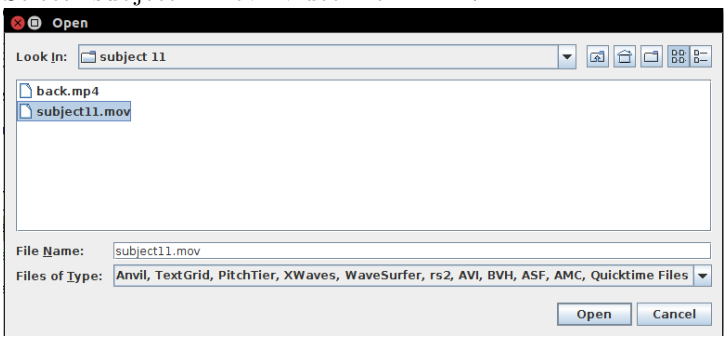
3.4 Articulate Coding Scheme

The Articulate coding scheme is available at bitbucket:
git@bitbucket.org:articulateannotations/annotations.git

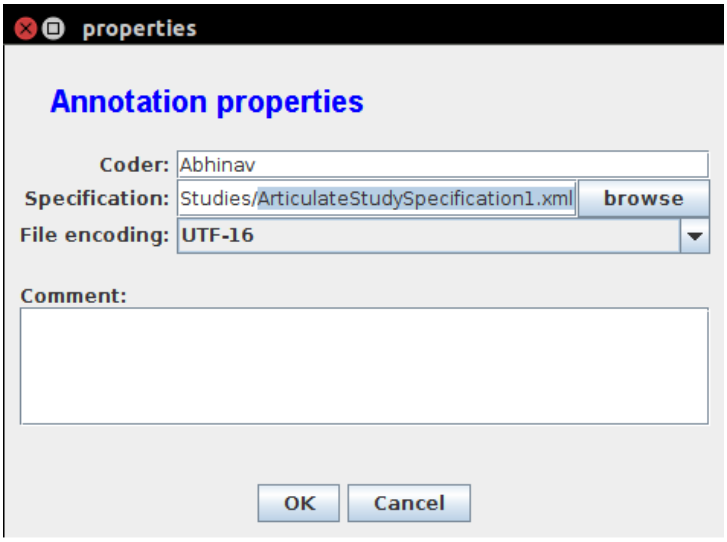
4 Example

Once ANVIL and FFmpeg are setup, the following is a step-by-step guide of a successful annotation of subject 11 from the Articulate user study.

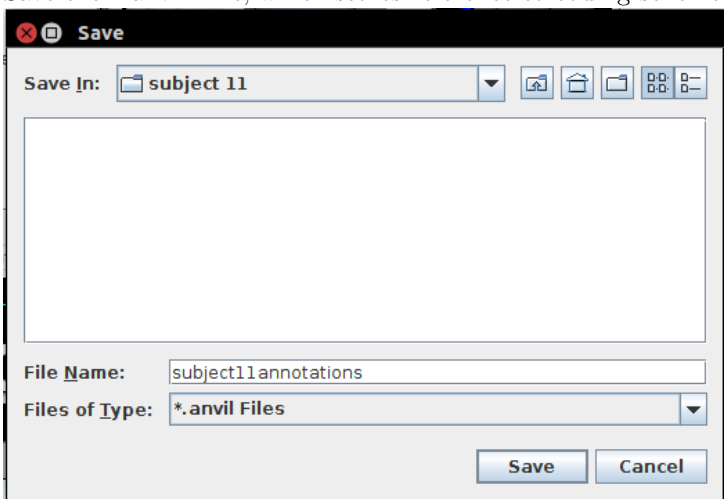
1. Convert incompatible user study video file using FFmpeg:
   ```
   ffmpeg -i back.mp4 -vcodec h263 -acodec pcm_s16be -ac 2 -ar 32000 -s 352x288 -r 25 -ab 32k subject11.mov
   ```

2. Select "subject11.mov" video file in ANVIL.
   

3. Select the coding scheme specification file "ArticulateStudySpecification1.xml" obtained using bitbucket.

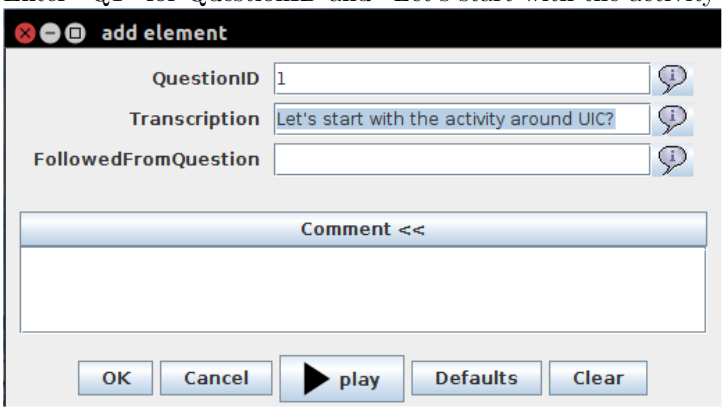


4. Save the ".anvil" file, which stores reference to coding scheme file, annotations made, and selected video file.



5. Under the Annotations tracks, select the "Questions" track in the range 07:46 to 07:51. Then, right-click and select "Create & Edit" menu option.

6. Enter "Q1" for QuestionID and "Let's start with the activity around UIC?" for Transcription.



7. The first question has been successfully annotated for subject 11.