

Description of ffmpeg and ffmpeg installation

The ffmpeg and ffmpeg packages is installed by first check if the ffmpeg exists then if it is not existed proceed to download the ffmpeg static build of the Ffmpeg from the given URL. It will then find the ffmpeg static file from the given URL and unzipped it. Lastly, it will add the directory to the environment variable "PATH".

Analysis of the application

The application starts off with defining the function which extracts the video and audio information of a file using ffmpeg. Then it goes through a series of if-statements to determine which of the fields does not meet the requirements of the film festival. For each of the if-statement, it will first extract the requirement information for the respective fields from the video or audio list. Then check the field format, if it doesn't meet the requirement, it will assigned the file format from true to false and will add the problematic fields of the films to the text report and convert the incorrect format films to the correct format with ffmpeg command. The ffmpeg command has all the format filter set for the format of the films specified by the festival organisation. This is to make sure all the given requirement of the output video file are met.

After defining the class function, the application will iterate through the file names of the video where the folder name will be appended to the file names and call the class function ffmpeg. Then send the files to the ffmpeg.checkfile() function in ffmpeg to determine if the given files had met the given requirements of the film festival.

The acceptable parameters of the application include mp4 video format, video codec of h264, audio codec of aac, frame rate of 25FPS, aspect ratio of 16:9, resolution of 640x360, the bit rate for video is 2-5Mb/s and for audio is up to 256kb/s and a stereo audio channel. The series of film sent by the film organization do not meet all the requirements mentioned above. Thus, all of them required updating of file format by using ffmpeg framework.

Description of the terms

A video format is the file type of a video. Video codec and audio codec is a set of algorithms which allow us to encode and decode the digital data of video and audio. Frame rate is the number of times images are flashed on a screen during a given second which gives the illusion of movement. The aspect ratio indicates the presentation of a video by providing the ratio of width to height measured in pixels. It determines how much space surrounds the subject of a series of moving images. Video resolution is the total number of pixels on a given video frame rate. The higher the number of pixels in each frame, the better the quality of the video. Audio channel is a representation of sound entering and existing via a single point. Stereo audio files, contain left channel and right channel information that tell the left and right speaker when to push and pull air. Video bitrate and audio bit rate mean the quantity of data required for your encoder to transmit video or audio in one single second It determines the quality of your video and how much data will be used to play it.