A REPORT

ON

Video Editing Tool using Python

By

Pilli.Manideep 1700153C203

Prepared in partial fulfillment of the

Practice school 2 Course

AT

Symbiosis Technologies

IT Park, Hill No: 2, Rushikonda, Visakhapatnam, Andhra Pradesh 530048

A Practice school -2 Station of

BML MUNJAL UNIVERSITY

(July 2019)

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TABLE OF CONTENTS

1. Certificate.

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Certificate of authenticity

CERTIFICATE

This is to certify that Practice School Project of P. Manideep titled Videoediting using Python is an original work and that this work has not been submitted anywhere in any form. Indebtedness to other works/publications has been duly acknowledged at relevant places. The project work was carried during 21-5-19 to 10-7-15 in Symbyosys Technologies

Signature of PS-II faculty	**Signature of industry mentor/Supervisor**
Name: Dr. Y. Sridhar Babu	**Name:** N. Anila
Designation:	**Designation:** Chief operating officer
(Seal of the organization with Date)	SYMBIOSYS TECHNOLOGIES Visakhapatnam - 3 *(Seal of the organization with Date)*

PS-II Report Evaluation Rubric and Project Report format

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SYMBIOSYS TECHNOLOGIES

SYMBIOSYS TECHNOLOGIES
2D, Balaji Mangalagiri Chambers,
Siripuram,
Visakhapatnam - 530 003.

Date: 11-07-2019

Letter of Internship

Sub: Successful completion of Video Editing Software Using Python

This certificate confirms that Mr. **Pilli Manideep** bearing the registration number 1700153C203 has successfully completed an internship at Symbiosys Technologies from 21st May, 2019 to 10th July, 2019. The intern has successfully completed the "Video Editing Software Using Python". The intern has exhibited very good analytical skills and demonstrated good technical understanding.

Yours Sincerely

L.Kesava Rao
HR & Accounts Manager

IT Park, Hill No. 2, Rushikonda, Visakhapatnam, A.P., INDIA.
www.symbiosystech.com, e-mail : info@symbiosystech.com
Phone : 0891-2550369, 6459144, Fax : 91-891-6645144

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2. ACKNOWLEDGEMENT

I have taken efforts in this internship. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.

I am highly indebted to **SYMBIOSIS TECHNOLOGIES**. for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the project.

I would like to express my gratitude towards my faculty mentor **Dr. Y.SRIDHAR BABU** and my industry mentor **Ms.N ANILA** for their kind cooperation and encouragement throughout the internship period.

I would like to express my special gratitude and thanks to industry persons for giving me such attention and time.

I would like to thank the people from the university who kept me notified about the updates and cleared all my doubts instantly.

My thanks and appreciation also go to my university and my dean in developing such a unique program that exposed me to the industry during the early years of my graduation.

3.Objectives

Video modification tool using python is a software that can be used to edit the videos into our desirable way.

The following are the categories in which we can modify a video

1. **Trimming the video for required duration**
2. **Increasing the brightness of the content in video**
3. **Resize video into required resolutions**
4. **Altering the video playback speed(Faster)**
5. **Altering the video playback speed(Slower)**
6. **Creating a mashup of two or more videos**
7. **Mirror the video(rotating in different directions)**

By using video editing video we can modify the video in above categories and the system creates a new video file with required changes.

4. Problem statement

There are many reasons to edit a video and your editing approach will depend on the desired outcome. Before you begin you must clearly define your editing goals, which could include any of the following:

Remove unwanted footage

This is the simplest and most common task in editing. Many videos can be dramatically improved by simply getting rid of the flawed or unwanted bits.

Choose the best footage

It is common to shoot far more footage than you actually need and choose only the best material for the final edit. Often you will shoot several versions (takes) of a shot and choose the best one when editing.

Create a flow

Most videos serve a purpose such as telling a story or providing information. Editing is a crucial step in making sure the video flows in a way which achieves this goal.

Add effects, graphics, music, etc

This is often the "wow" part of editing. You can improve most videos (and have a lot of fun) by adding extra elements.

Alter the style, pace or mood of the video

A good editor will be able to create subtle mood prompts in a video. Techniques such as mood music and visual effects can influence how the audience will react.

Give the video a particular "angle"

Video can be tailored to support a particular viewpoint, impart a message or serve an agenda.

5.COMPANY PROFILE

Symbiosys Technologies was founded in 2001 and is a 100% export oriented unit, registered in the Visakhapatnam Special Economic Zone (VSEZ). We provide high-quality services and solution to our client's worldwide.

The development center for Symbiosys Technologies is located in India with offices in the US. The company aims at developing innovative and cost effective end to end technology solutions with high performance and security.

Since our inception, Symbiosys Technologies has always been committed to delivering excellent results for our clients catering to their requirement by providing them with the highest quality of offshore development services on various platforms.

As results-oriented problem solvers, we thrive to successfully meet our client's requirements on a priority basis. We take pride in teaching the technology to everyone we talk to and feel privileged in getting them to experience it, we specialize in providing Xpress services (Express Solutions online).

6.METHODOLOGY

- Before starting the project, one needs to have complete knowledge of how a video editing software works and role of python, as I am new to python ,our training period played a major role in developing skills and abilities required for the project.
- The first two weeks I was trained based on sessions where our company mentor explained about the basics of python and object oriented programming in python.
- Later I was trained about the GUI(graphical user interface)
- After the training period, the first thing I did was to research on all other existing video editing softwares. This made me clear about the tools and gave a clear cut outline of my project

6.1 Assumptions

- This software is used to convert video into desirable modified video.
- Customized data is stored in the system
- User doesn't have edit the video manually

6.2 Data collection and survey

Moviepy is the library which I used for editing the video on python, as moviepy is

- **Simple an intuitive**. Basic operations can be done in one line. The code is easy to learn and easy to understand for newcomers.
- **Flexible**. You have total control over the frames of the video and audio, and creating your own effects is easy as Py.
- **Portable**. The code uses very common software (Numpy and FFMPEG) and can run on (almost) any machine with (almost) any version of Python.

Later I used **graphical user interface** (**GUI**) it a form of user interface that allows users to interact with electronic devices through graphical icons and visual indicators such as secondary notation, instead of text-based user interfaces, typed command labels or text navigation.

6.3 Algorithms Processed and Results

a) To trim a Video

Algorithm: To edit and remove the unwanted video and create subclip

from moviepy.editor import *

myvideo1 = VideoFileClip("Filename.mp4")

myvideoedited = myvideo1.subclip(6,11)

myvideoedited.write_videofile('clip1.mp4',codec='libx264')

myvideoedited.show()

Result:

A reduced playback time video for required durations

b) Increasing or Decreasing the brightness of the video

Algorithm:

for darker video

from moviepy.editor import *

myvideo1 = VideoFileClip("filename.mp4")

myvideoedited = myvideo1.fx(vfx.colorx, 0.5) # darken the picture

myvideoedited.write_videofile('clip4.mp4',codec='libx264')

For brighter video

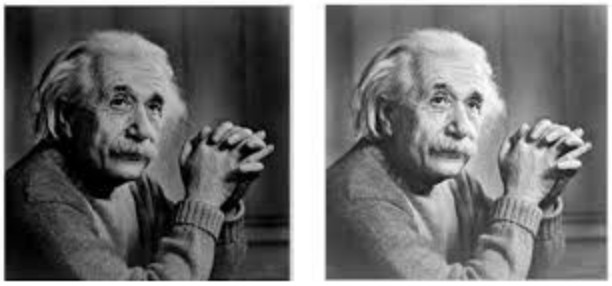
from moviepy.editor import *

myvideo1 = VideoFileClip("filename.mp4")

myvideoedited = myvideo1.fx(vfx.colorx, 2.0)

myvideoedited.write_videofile('clip4.mp4',codec='libx264')

Result:



c) Resize video into required resolutions

Algorithm: Changing the resolution to

from moviepy.editor import *

myvideo1 = VideoFileClip("DO NOT OPEN - 1 Minute Film.mp4")

myvideoedited = myvideo1.fx(vfx.resize, width=460) # resize (keep aspect ratio)

myvideoedited.write_videofile('clip2.mp4',codec='libx264')

myvideoedited.preview()

Result:

d) Altering the video playback speed(Faster)

Algorithm: Faster by 2 times

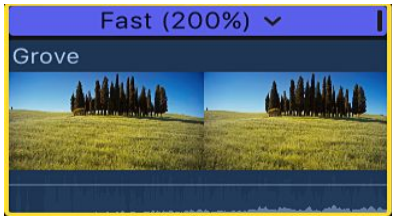
from moviepy.editor import *

myvideo1 = VideoFileClip("DO NOT OPEN - 1 Minute Film.mp4")

myvideoedited = myvideo1.fx(vfx.speedx, 2) # double the speed

myvideoedited.write_videofile('clip3.mp4',codec='libx264')

Result: Playback time has been reduced by half



e)Altering the video playback speed(Slower)

Algorithm: Slower by 0.5 times

myvideo1 = VideoFileClip("DO NOT OPEN - 1 Minute Film.mp4")

myvideoedited = myvideo1.fx(vfx.speedx, 0.5)

myvideoedited.write_videofile('clip3.mp4',codec='libx264')

Result: Playback time has been increased by twice

f)Creating a mashup of two or more videos

Algorithm: concatenating a video after other

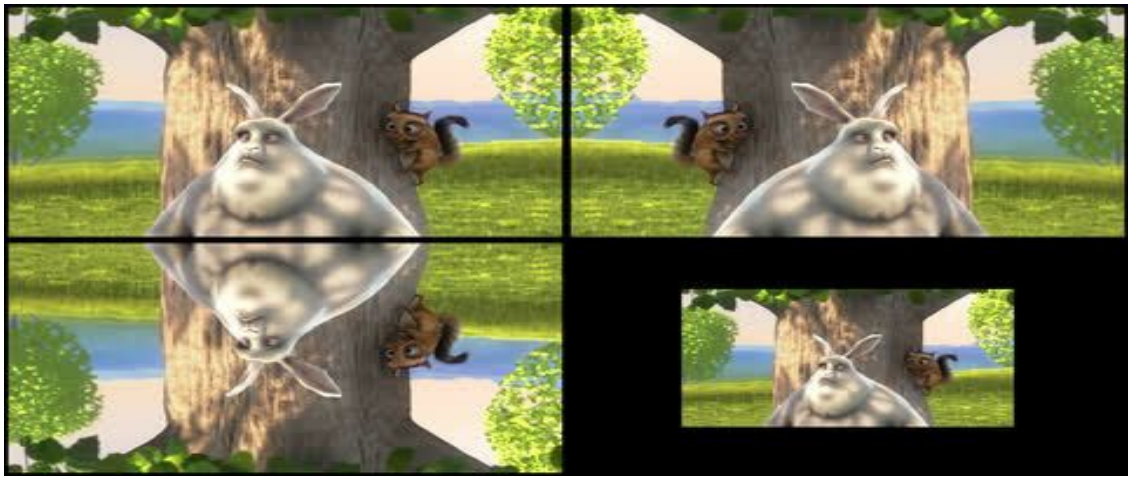
```
myvideo1 = VideoFileClip("trimclip.mp4")
myvideo2 = VideoFileClip("brightclip.mp4")
myvideo3 = VideoFileClip("2xclip.mp4")
final_clip = concatenate_videoclips([myvideo1,myvideo2,myvideo3])
final_clip.write_videofile("mixclip.mp4")
myvideoedited.preview()
```

Result:

g) Mirror the video(rotating in different directions)

Algorithm: Rotating video with respect to X-axis and Y-axis

```
myvideo1 = VideoFileClip("DO NOT OPEN - 1 Minute Film.mp4").margin(10)
myvideo2 = myvideo1.fx( vfx.mirror_x)
myvideo3 = myvideo1.fx( vfx.mirror_y)
myvideo4 = myvideo1.resize(0.60) # downsize 60%
myvideoedited = clips_array([[myvideo1, myvideo2],
                  [myvideo3, myvideo4]])
myvideoedited.resize(width=480).write_videofile("clip.mp4")
myvideoedited.preview()
```

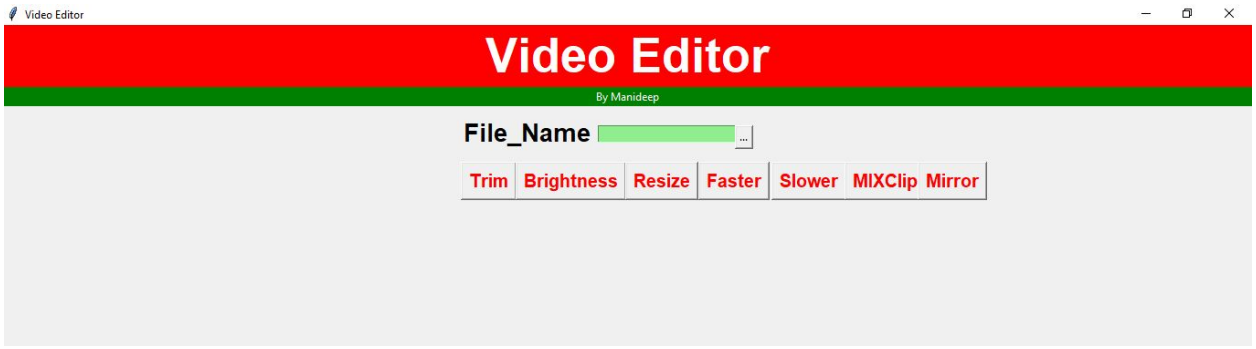


Graphical User Interface :-

```
from tkinter import *
root =Tk()
root.title("Video Editor")
one = Label(root, text="Video Editor", font=("arial",40,"bold"),bg="red",fg="white")
one.pack(fill=X)
two = Label(root, text="By Manideep",bg="green",fg="white")
two.pack(fill=X)
label= Label(root,text="File_Name",font=("ariel",20,"bold")).place(x=500,y=100)
button1 = Button(root, text="Trim",font=("arial",15,"bold"),fg="red").place(x=500,y=150)
button2 = Button(root,
text="Brightness",font=("arial",15,"bold"),fg="red").place(x=560,y=150)
button3 = Button(root, text="Resize",font=("arial",15,"bold"),fg="red").place(x=680,y=150)
button4 = Button(root, text="Faster",font=("arial",15,"bold"),fg="red").place(x=760,y=150)
button5 = Button(root, text="Slower",font=("arial",15,"bold"),fg="red").place(x=840,y=150)
button6 = Button(root, text="MIXClip",font=("arial",15,"bold"),fg="red").place(x=920,y=150)

name=StringVar()
entry_box= Entry(root,textvariable=name,width=25,bg="lightgreen").place(x=650,y=110)
root.mainloop()
```

Result:



-

Complete code:

```
from tkinter import filedialog
from tkinter import *
from moviepy.editor import *
def mfileopen():
    file1= filedialog.askopenfile()
    print(file1)
def trim():
        try:
          myvideo1 = VideoFileClip("DO NOT OPEN - 1 Minute Film.mp4")
          myvideoedited = myvideo1.subclip(6,11)
          myvideoedited.write_videofile('trimclip.mp4',codec='libx264')
          myvideoedited.preview()
        except IOError:
                pass
def brightness():
            try:
              myvideo1 = VideoFileClip("DO NOT OPEN - 1 Minute Film.mp4")
              myvideoedited = myvideo1.fx( vfx.colorx, 1.5) # darken the picture
              myvideoedited.write_videofile('brightclip.mp4',codec='libx264')
              myvideoedited.preview()
            except IOError:
                    pass
```

```
def resize():
        try:
           myvideo1 = VideoFileClip("DO NOT OPEN - 1 Minute Film.mp4")
           myvideoedited = myvideo1.fx( vfx.resize, width=460) # resize (keep aspect ratio)
           myvideoedited.write_videofile('resizeclip.mp4',codec='libx264')
           myvideoedited.preview()
        except IOError:
                pass
def faster():
        try:
           myvideo1 = VideoFileClip("DO NOT OPEN - 1 Minute Film.mp4")
           myvideoedited = myvideo1.fx( vfx.speedx, 2)
           myvideoedited.write_videofile('2xclip.mp4',codec='libx264')
           myvideoedited.preview()
        except IOError:
          pass
def slower():
        try:
           myvideo1 = VideoFileClip("DO NOT OPEN - 1 Minute Film.mp4")
           myvideoedited = myvideo1.fx( vfx.speedx, 0.5)
           myvideoedited.write_videofile('0.5xclip.mp4',codec='libx264')
           myvideoedited.preview()
        except IOError:
                pass
def mixclip():
         try:
            myvideo1 = VideoFileClip("trimclip.mp4")
            myvideo2 = VideoFileClip("brightclip.mp4")
            myvideo3 = VideoFileClip("2xclip.mp4")
            final_clip = concatenate_videoclips([myvideo1,myvideo2,myvideo3])
            final_clip.write_videofile("mixclip.mp4")
            myvideoedited.preview()
         except IOError:
                 pass
def mirror():
        try:
           myvideo1 = VideoFileClip("DO NOT OPEN - 1 Minute Film.mp4").margin(10) # add
10px contour
```

```
            myvideo2 = myvideo1.fx( vfx.mirror_x)
            myvideo3 = myvideo1.fx( vfx.mirror_y)
            myvideo4 = myvideo1.resize(0.60) # downsize 60%
            myvideoedited = clips_array([[myvideo1, myvideo2],
                                [myvideo3, myvideo4]])
            myvideoedited.resize(width=480).write_videofile("clip.mp4")
            myvideoedited.preview()
        except IOError:
                pass

root =Tk()
root.title("Video Editor")
one = Label(root, text="Video Editor", font=("arial",40,"bold"),bg="red",fg="white")
one.pack(fill=X)
two = Label(root, text="By Manideep",bg="green",fg="white")
two.pack(fill=X)
label= Label(root,text="File_Name",font=("ariel",20,"bold")).place(x=500,y=100)
button1 = Button(root,
text="Trim",font=("arial",15,"bold"),fg="red",command=trim).place(x=500,y=150)
button2 = Button(root,
text="Brightness",font=("arial",15,"bold"),fg="red",command=brightness).place(x=560,y=150
)
button3 = Button(root,
text="Resize",font=("arial",15,"bold"),fg="red",command=resize).place(x=680,y=150)
button4 = Button(root,
text="Faster",font=("arial",15,"bold"),fg="red",command=faster).place(x=760,y=150)
button5 = Button(root,
text="Slower",font=("arial",15,"bold"),fg="red",command=slower).place(x=840,y=150)
button6 = Button(root,
text="MIXClip",font=("arial",15,"bold"),fg="red",command=mixclip).place(x=920,y=150)
button8 = Button(root,
text="Mirror",font=("arial",15,"bold"),fg="red",command=mirror).place(x=1000,y=150)

name=StringVar()
entry_box= Entry(root,textvariable=name,width=25,bg="lightgreen").place(x=650,y=110)
button7= Button(root,text="...",command=mfileopen).place(x=800,y=110)
root.mainloop()
```

7. Results and Discussion

- All the objectives that have been mentioned above have been accomplished.And there are various problems placed by me.
- During the initial process of video editing tool, there are a lot of issues encountered.Firstly, I don't have much knowledge about how video editing is done.Thus, a lot of research has to be done to understand the tool.
- For the coding part, I meet some problems with exception and not defined errors with research I have completed the desired output.
- Apart from coding error, I have faced problem regarding GUI with arranging the buttons and taking input file location from user which has been solved later.

Evaluation of Strengths and Weakness:

Strengths:

➔ User interface s considered user friendly and ease to use with GUI.

- ➔ System response is fact after user press button to perform some actions.
- ➔ No additional unnecessary steps required to edit the video.
- ➔ System automatically converts video after pressing required button.
- ➔ Can edit any format video to required conversions.

Weakness:

- ➔ System can't be implemented without command prompt.
- ➔ System can not select file by its own.

8. Conclusion

1. The main objective of the report is to provide user-friendly video editing tool so that Video editing can be done simply .Although there were many challenges, the problems have been successfully achieved.Hence, I could successfully accomplished the task by overcoming the problems and finishing the project successfully.
2. The working environment at the organization has helped me to understand the correct approach towards any given project. This project has introduced us to the import topics like PYTHON and GUI. we would like to conclude that it was a fun learning experience which exposed us to the industry life and gain an experience of work which will surely beneficial in the future.
3. In conclusion of this practice school, it has been an excellent and rewarding experience. I have met and got contacts of many people. I am sure they will be able to help me with opportunities in the future.one main thing I have learned through internship is time management skills.Moreover, it gave me an exposure towards the industrial aspect of

engineering which I am pretty sure will be very beneficial in my career since I came to know how a company runs. I appreciate our university for organizing this internship.

9. References

1) https://www.youtube.com/watch?v=HBxCHonP6Ro&list=PL6gx4Cwl9DGAcbMi1sH6oAMk4JHw91mC_
2) https://www.tutorialspoint.com/python/python_gui_programming
3) https://www.geeksforgeeks.org/python-programming-language/
4) https://zulko.github.io/moviepy/