**A**

**Synopsis**

**on**

**Image to a pencil sketch**

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**ABSTRACT**

This project is about how new technologies can be used to develop a python application that enables the user to make a sketch of any Images. We will try to convert a normal photo into a sketch using computer vision, machine learning in a python programming Language.

This Project make it easier for peoples to understand how painters create pencil drwaings, one of the most basic pictorial languages for representing the abstract perception of natural scenes.

This is accomplished through the use of graphical interface Python tools such as Tkinter, matplotlib, and others. The user can easily choose an image from their files. Then it can select the convert button. The picture has been transformed into a lovely sketch.

The project's primary goal is to better human-computer interaction by creating a method to assist people by converting their various images into a beautiful sketch. The user is provided with a decent user interface to upload a sketch input image and obtain related output images.

**INTRODUCTION**

In today’s era, we are surrounded by different types of photo manipulating [filters](https://analyticsindiamag.com/adobes-new-ai-powered-tools-make-job-photo-video-editor-redundant/) in our mobile phones, apps…etc. But do you know how they do these images manipulations…..? In the backend, they are using [computer vision](https://analyticsindiamag.com/how-do-data-scientists-create-high-quality-training-datasets-for-computer-vision/) techniques. Computer vision has a wide variety of applications not only to reduce the human effort but also used for entertainment apps. Many photo editing apps like [FaceApp](https://analyticsindiamag.com/the-ai-behind-faceapp/), Instagram filters…etc are using computer vision techniques.

In this Project, we will try to convert a normal photo into a pencil sketch using computer vision in a [python](https://analyticsindiamag.com/comparing-python-libraries-pylearn2-vs-scikit-learn/) programming language. In this Project, we will show how to convert an image into its corresponding pencil sketch in a few steps.

This system helps people better understand how painters produce pencil drawings, which is one of the most fundamental pictorial languages to abstract human perception of natural scenes.

**TECHNOLOGY USED**

**Python**

Python is a high-level, interpreted programming language. It is a robust, highly useful language focused on rapid application development (RAD). Python helps in the easy writing and execution of codes. Python can implement the same logic with as much as 1/5th code as compared to other OOPs languages. Python provides a huge list of benefits to all. The usage of Python is such that it cannot be limited to only one activity. Its growing popularity has allowed it to enter some of the most popular and complex processes like Artificial Intelligence (AI), Machine Learning (ML), natural language processing, Data science, etc. Python has a lot of libraries for every need of this project such as Pytube for downloading videos, selenium for web automation, etc. Python is reasonably efficient. Efficiency is usually not a problem for small examples. If your Python code is not efficient enough, a general procedure to improve it is to find out what is taking most of the time and implement just that part more efficiently in some lower-level languages.

**OpenCV**

OpenCV (Open Source Computer Vision Library) is an open source computer vision and

machine learning software library. OpenCV was built to provide a common infrastructure

for computer vision applications and to accelerate the use of machine perception in the

commercial products. Being an Apache 2 licensed product, OpenCV makes it easy for

businesses to utilize and modify the code. The library has more than 2500 optimized

algorithms, which includes a comprehensive set of both classic and state-of-the-art

computer vision and machine learning algorithms. These algorithms can be used to detect

and recognize faces, identify objects, classify human actions in videos, track camera

movements, track moving objects, extract 3D models of objects, produce 3D point clouds

from stereo cameras, stitch images together to produce a high resolution image of an entire

scene, find similar images from an image database, remove red eyes from images taken

using flash, follow eye movements, recognize scenery and establish markers to overlay it

with augmented reality, etc.

**HARDWARE AND SOFTWARE REQUIREMENTS**

* Processor i5 and above
* 4 GB Ram and above
* Windows 8 and above

**MODULES**

1. **Select File:** This is a module in which the application will select the file from the user data. The user select their own choice of image that it want to convert into a beautiful sketch.
2. **Convert File:** In this module the application can be able to convert a user selected image into a beautiful sketch.

**FUTURE SCOPE**

The making of sketch of the any images with a traditional method is complex. To make a sketch with a traditional method, an artist required the most important things like patience, time, and keep an eye for detail and composition.

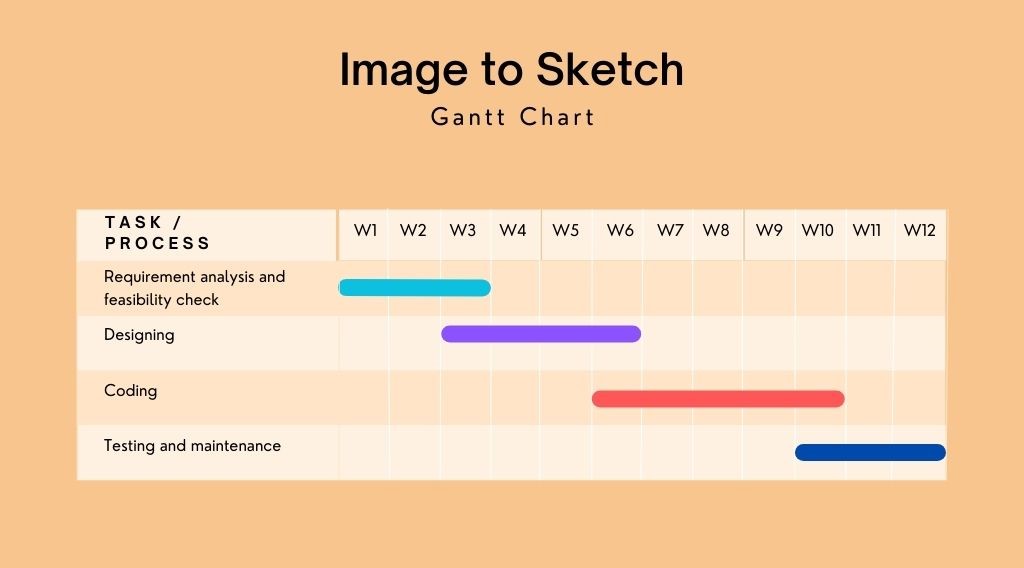
The future of this project will help the peoples, artist, etc. to make easily the beautiful and attractive sketch of any image. They can simple make a sketch by selecting the image in a user files and get a output as a sketch. The technology we used in this project help the peoples to easily interact with the application. It also help the people to not depend on the artist to make their won sketch. They can easily perform the task by interacting with a application.

**CONCLUSION**

I would like to conclude that, it is emmensive learning experience while preparing the project. This is achieved through an easy to use graphical interface python libraries like Tkinter, matplotlib,etc. User can simply select the image from their files. After that it can click on the convert button. The image is converted into a beautiful sketch.

The main motive behind the project is to improve human computer interaction by developing an approach to help people by converting their different images into a beautiful sketch. A good user interface is provided to the user to upload a sketch input image and receive related output images.

**Gantt Chart**

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