Cartooning of real image in python

Submitted in partial fulfilment of the requirements for the award of degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE &ENGINEERING

CHANDIGARH UNIVERSITY

Discover. Learn. Empower.

Submitted to:

Er Amandeep Kaur

Submitted by:

KUMAR AAKARSHAN (18BCS6640)

RITIK DHAND (18BCS6661)

VANSHIKA (19BCS8002)

Mentor Signature (name and ecode)

X

Amandeep Kaur

E9596

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Chandigarh University, Gharuan

June 2021

1. **Implementation (100%)**

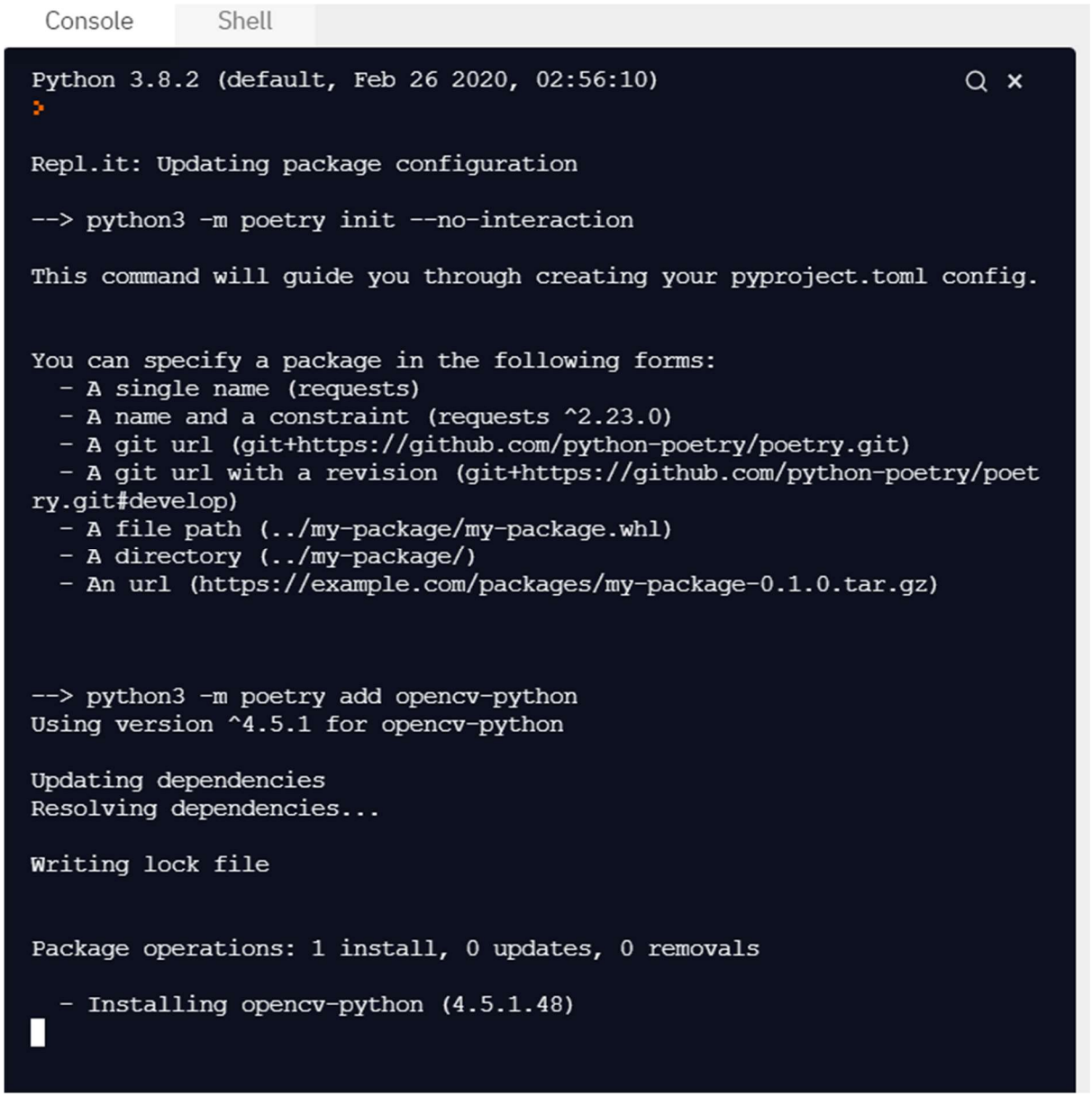
Methodology:

1. The initial step of cartooning image is to apply the bilateral filter to decrease the shading or color palette of the image, which implies first we need to downscale the image and afterward apply the bilateral filter to get an animation flavor and again we upscale the image.
2. The next step is to get a blurred image of the real image. And we just need the blurring of the limits without colors to interfere in this process. So, for this, we first convert the genuine picture to grayscale.
3. The following stage is to apply the median blur so as to diminish image noise in the grayscale image.
4. Next, we make an edge mask from the grayscale image utilizing an adaptive thresholding technique.
5. In the last step, we have to recognize the edges in the image and afterward add this to the recently changed pictures to get cartoonish or sketch pen impact to the picture. After this step, we finally combine the final images obtained from the previous steps.
6. Here we get our cartoonist image.

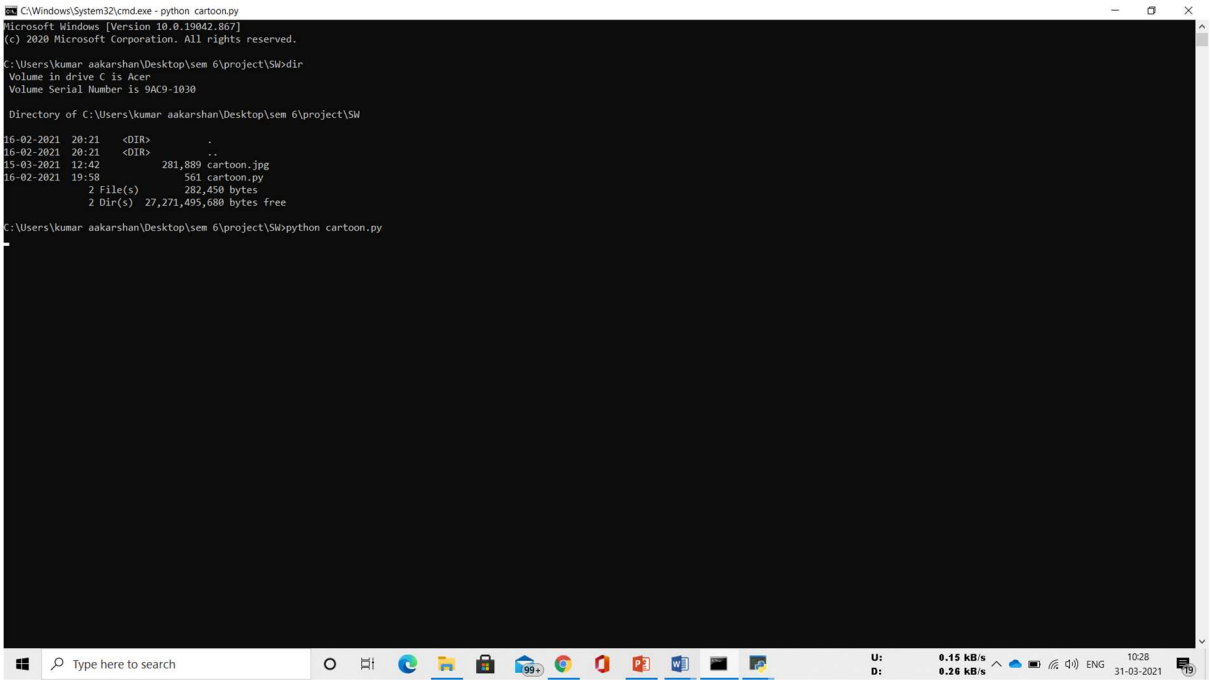
Snapshots:

Updating packages, and installing required module

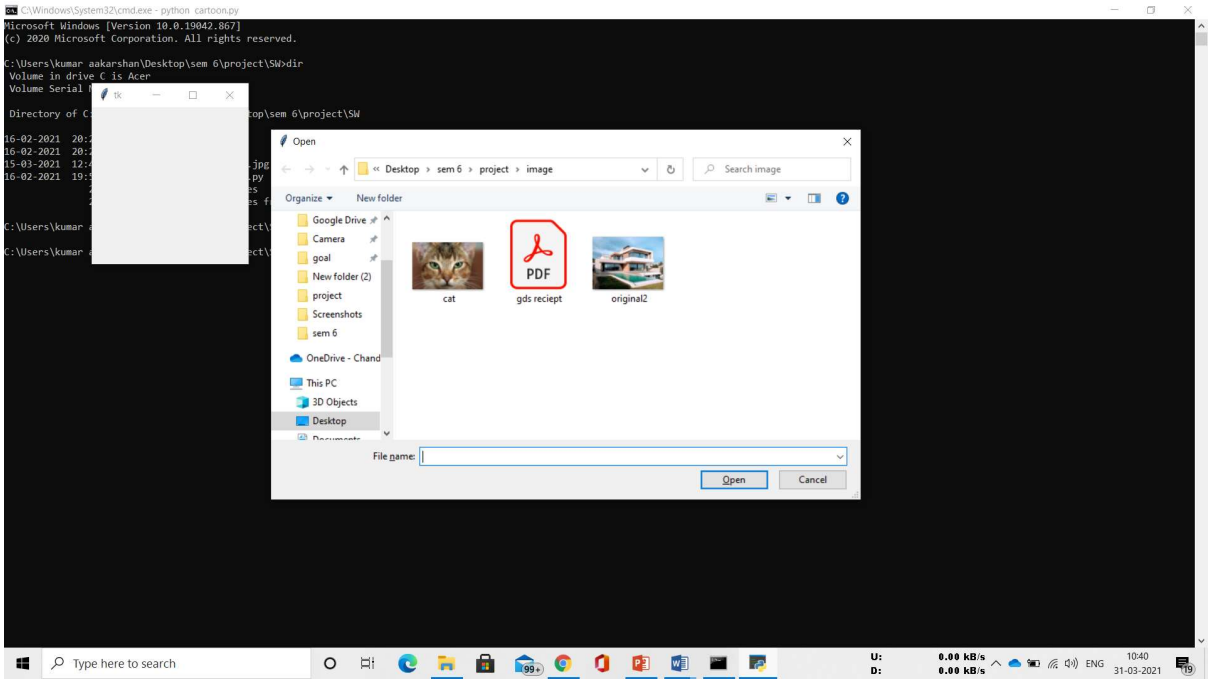
```
Repl.it: Updating package configuration

--> python3 -m poetry init --no-interaction

This command will guide you through creating your pyproject.toml config.


You can specify a package in the following forms:
  - A single name (requests)
  - A name and a constraint (requests ^2.23.0)
  - A git url (git+https://github.com/python-poetry/poetry.git)
  - A git url with a revision (git+https://github.com/python-poetry/poet
ry.git#develop)
  - A file path (../my-package/my-package.whl)
  - A directory (../my-package/)
  - An url (https://example.com/packages/my-package-0.1.0.tar.gz)



--> python3 -m poetry add opencv-python
Using version ^4.5.1 for opencv-python

Updating dependencies
Resolving dependencies...
```


Console
Shell
Python 3.8.2 (default, Feb 26 2020, 02:56:10)
Repl.it: Updating package configuration
--> python3 -m poetry init --no-interaction
This command will guide you through creating your pyproject.toml config.
You can specify a package in the following forms:
- A single name (requests)
- A name and a constraint (requests ^2.23.0)
- A git url (git+https://github.com/python-poetry/poetry.git)
- A git url with a revision (git+https://github.com/python-poetry/poetry.git#develop)
- A file path (../my-package/my-package.whl)
- A directory (../my-package/)
- An url (https://example.com/packages/my-package-0.1.0.tar.gz)
--> python3 -m poetry add opencv-python
Using version ^4.5.1 for opencv-python
Updating dependencies
Resolving dependencies...
Writing lock file
Package operations: 1 install, 0 updates, 0 removals
- Installing opencv-python (4.5.1.48)

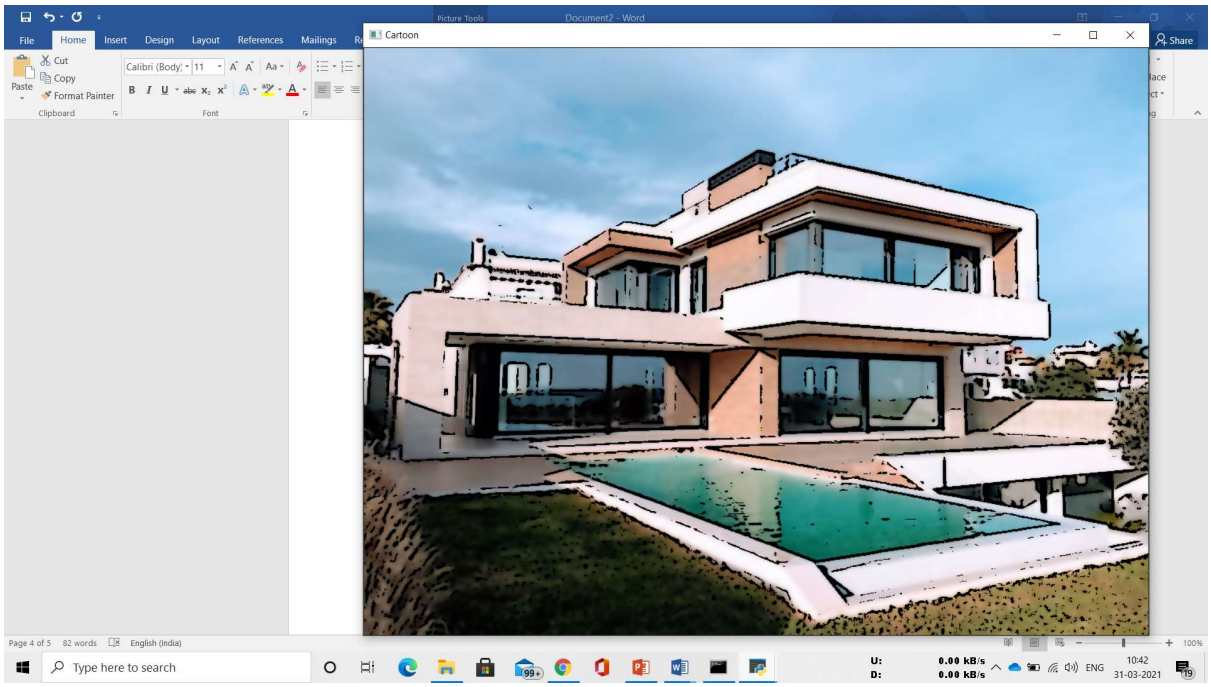
Running the program on cmd.



Taking input file

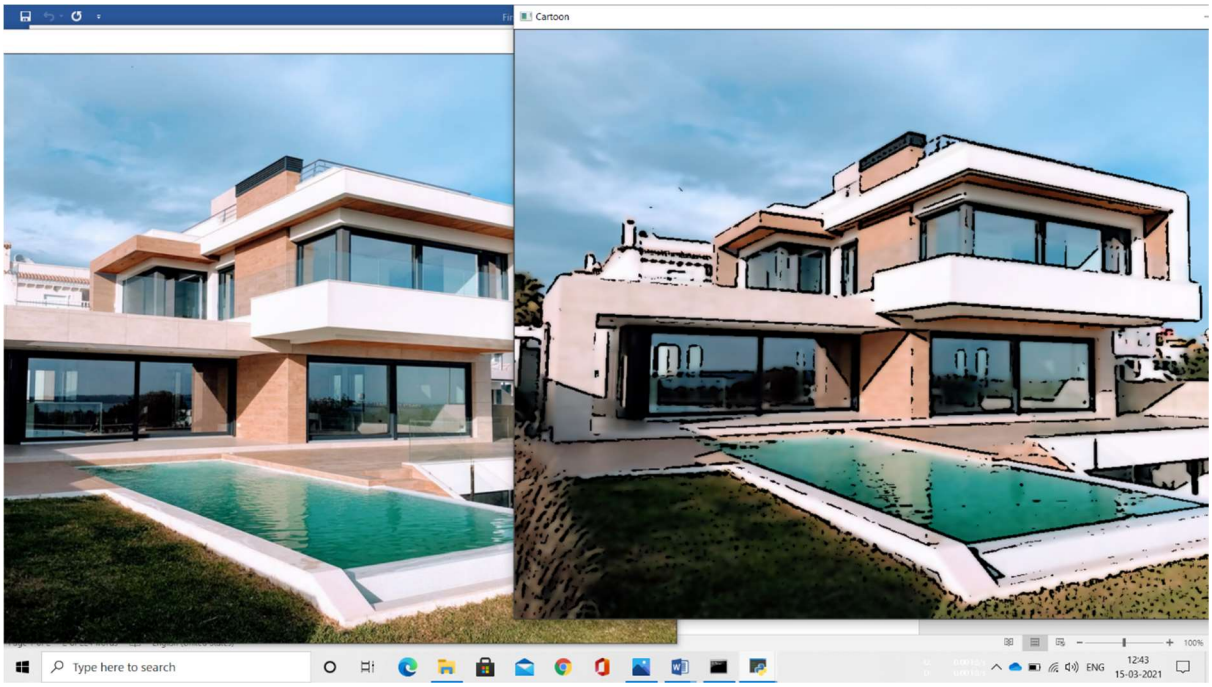


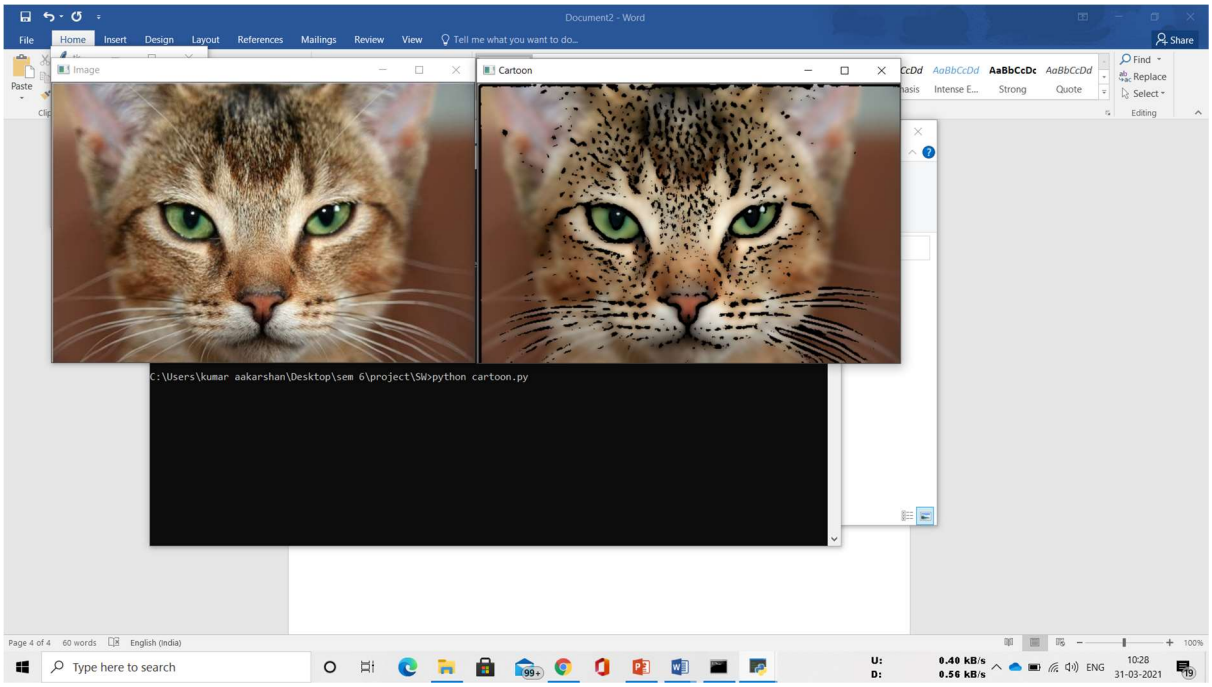
Getting output file:



2. Output validation and comparison

Input vs Output comparison.





3. **Team Work:**

   We all get to know about bilateral filter, ises and how to convert a real image into cartoon image.

   Kumar aakarshan: main module with integration of all module
   Ritik dhand: applied filter, CV etc
   Vanshika: poetry.lock module , packages such as numpy etc.