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EC ENGR 180DA
Lab 1

Task 1: (All references in Github)

Here is my URL.

The screenshot shows a GitHub repository page for 'zeidsolh/180DA-WarmUp'. The repository has 1 branch and 0 tags. The 'Code' tab is selected. A sidebar on the left lists 'zeidsolh Create 180DA-Lab1' and '180DA-Lab1'. The main area features a 'Favorites' section with icons for various services like Netflix, YouTube, Amazon, and Bing. Below it is a 'Frequently Visited' section with icons for LinkedIn, GitHub, and other sites. On the right, there's an 'About' section for '180DA-Lab1' showing 0 stars, 1 watching, and 0 forks. The 'Releases' and 'Packages' sections are currently empty. At the bottom, there's a navigation bar with links to GitHub's Terms, Privacy, Security, Status, Docs, Contact GitHub, Pricing, API, Training, Blog, and About pages.

Task 2:

Adding and committing files.

```
(base) zeidsolh@Zeids-MacBook-Pro 180DA-WarmUp % ls
180DA-Lab1    test.txt
(base) zeidsolh@Zeids-MacBook-Pro 180DA-WarmUp % vim test.py
(base) zeidsolh@Zeids-MacBook-Pro 180DA-WarmUp % conda activate zeid-env
(zeid-env) zeidsolh@Zeids-MacBook-Pro 180DA-WarmUp % python3 test.py
EECE_180_DA_DB  Best class ever
(zeid-env) zeidsolh@Zeids-MacBook-Pro 180DA-WarmUp % git add test.py
(zeid-env) zeidsolh@Zeids-MacBook-Pro 180DA-WarmUp % git commit -m "Added test.py"
[main 8de278b] Added test.py
 1 file changed, 8 insertions(+)
 create mode 100644 test.py
(zeid-env) zeidsolh@Zeids-MacBook-Pro 180DA-WarmUp % git status
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
(zeid-env) zeidsolh@Zeids-MacBook-Pro 180DA-WarmUp % git push
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 10 threads
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 441 bytes | 441.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/zeidsolh/180DA-WarmUp.git
  2187224..8de278b  main -> main
(zeid-env) zeidsolh@Zeids-MacBook-Pro 180DA-WarmUp %
```

You can now see I have committed test.py and test.txt. I have an extra 180DA-Lab1 file that I added.

Zeid Solh Added test.py

180DA-Lab1 Create 180DA-Lab1 1 hour ago

test.py Added test.py 1 minute ago

test.txt Added test.txt. 33 minutes ago

About

180DA-Lab1

0 stars 1 watching 0 forks

Releases

No releases published Create a new release

Packages

No packages published Publish your first package

Languages

Python 100.0%

Task 3: My test.py file

```
Zeid Solh Added test.py
```

Latest commit 8de278b last week History

8 lines (8 sloc) | 178 Bytes

```
1 if __name__ == '__main__':
2     x = "ECE_180_DA_DB"
3     if x == "EE_180_DA_DB":
4         print("You are living in 2017")
5     else:
6         # this is a comment
7         x = x + " - Best class ever"
8     print(x)
```

Output of test.py

```
[(zeid-env) zeidsolh@Zeids-MacBook-Pro 180DA-WarmUp % python test.py
ECE_180_DA_DB - Best class ever
(zeid-env) zeidsolh@Zeids-MacBook-Pro 180DA-WarmUp % ]
```

Task 4:

4.1 Here you can see me tracking the blue ball with a green bounding box around it. (It was nice to have you on video too :D).

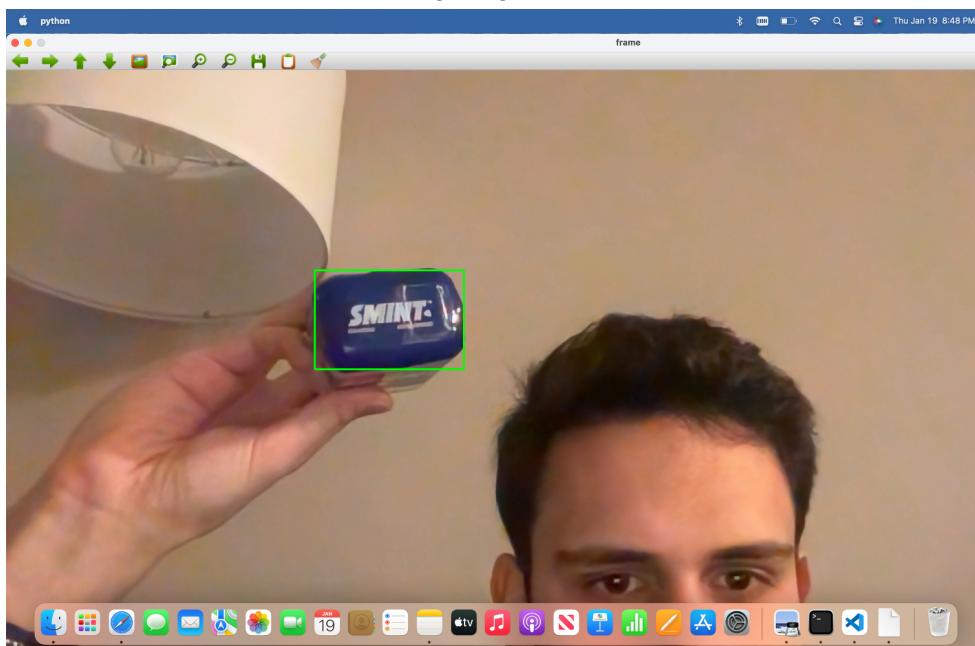


I tried doing it using rgb values but it didn't work. It was much more complicated.
Therefore I believe HSV is better :)

My threshold for blue is:

```
lower_blue = np.array([100,50,50])  
upper_blue = np.array([130,255,255])
```

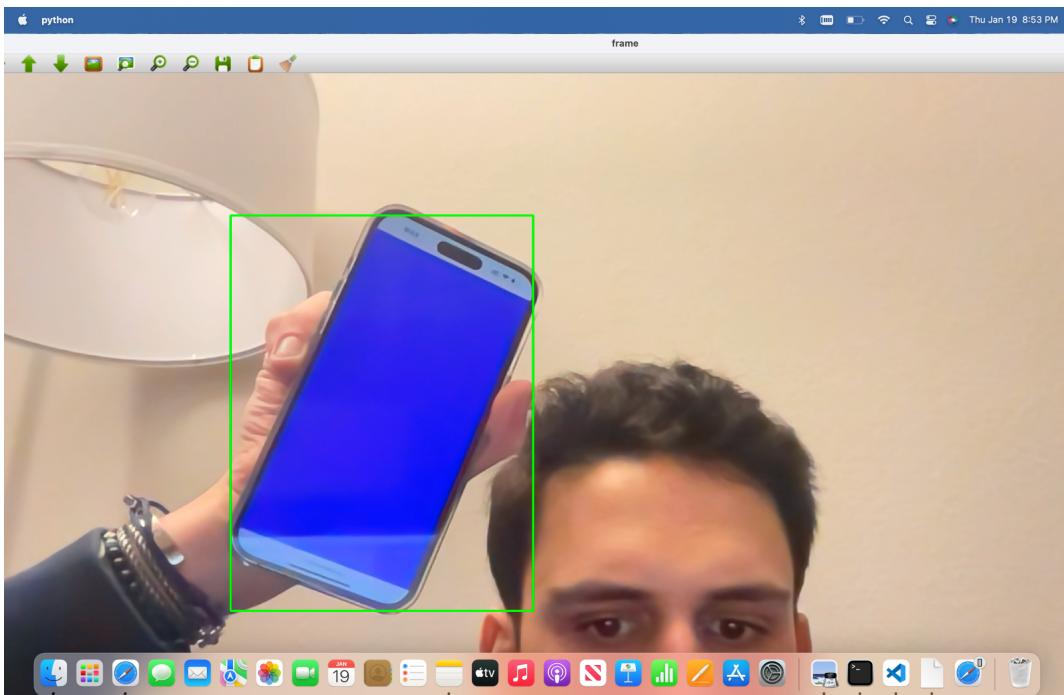
4.2 It was still accurate with low lighting, as we can see here.



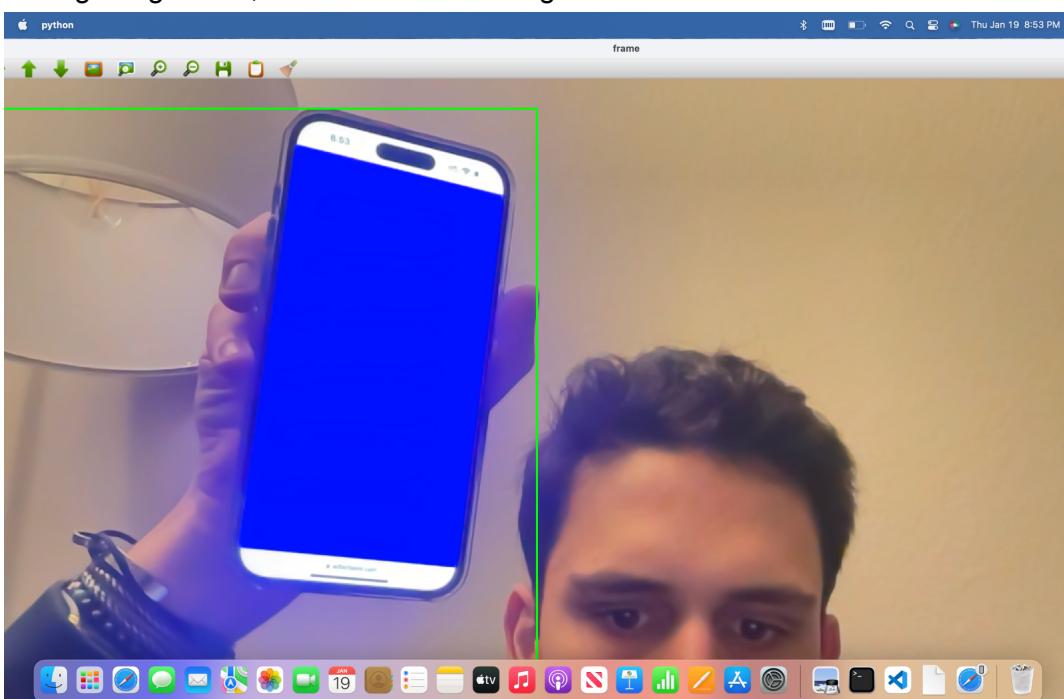
So there is no major difference in the tracking ability of my object. I do assume however that if we barely have any light, for example at night, there might be some issues. But mainly it is performing well.

4.3 I was able to detect the color on my phone. Changing the brightness on my phone affects the detection.

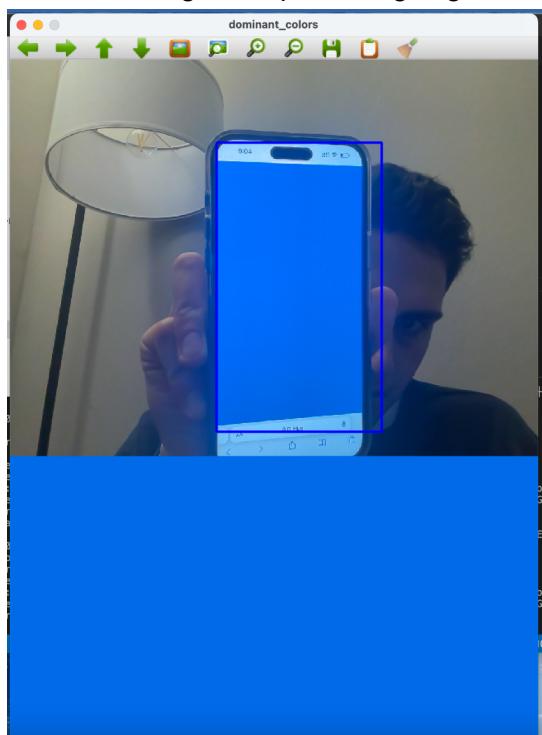
For low brightness, it performs well



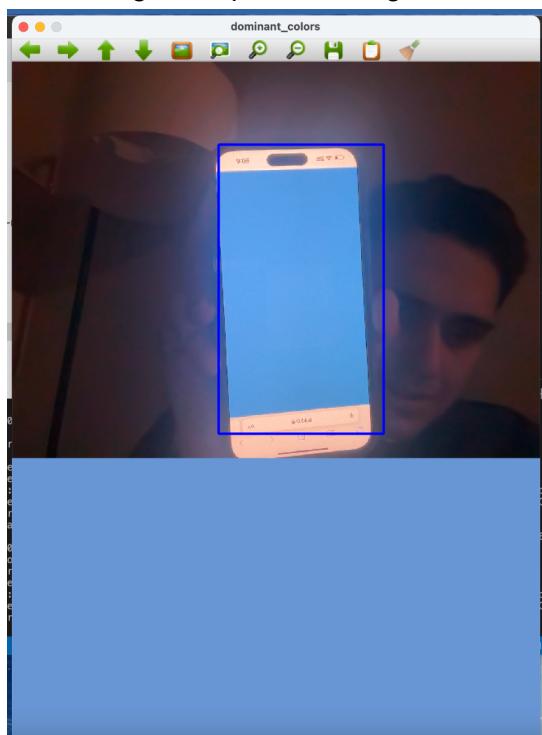
For high brightness, however the bounding box is not accurate



4.4 Blue background phone high light



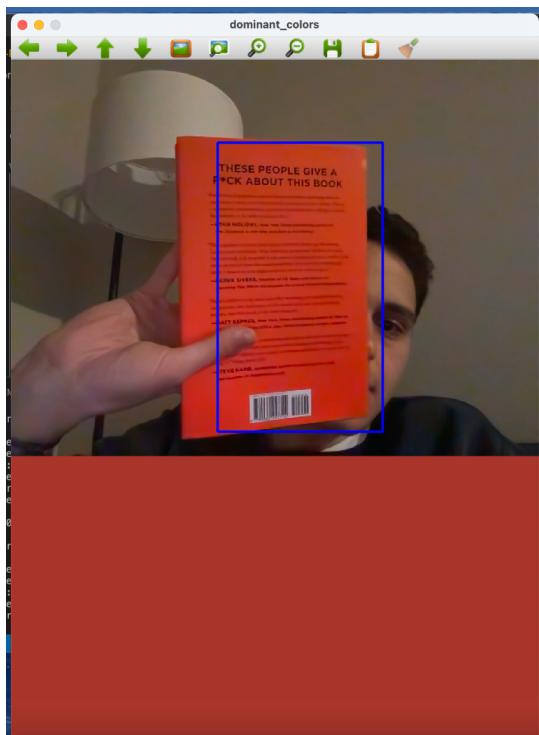
Blue background phone low light



Orange book high light



Orange book low light



As we can from those examples, we don't have much of a difference between the phone example and book. Maybe the book is a little bit more robust than the phone in terms of brightness but by a tiny factor. I think that may be because the phone uses an LED display.