COLOR BALL TRACKING

USING PYTHON

UPEC
UNIVERSITÉ
PARIS-EST CRÉTEIL
VAL DE MARNE

PROJECT PRESENTATION

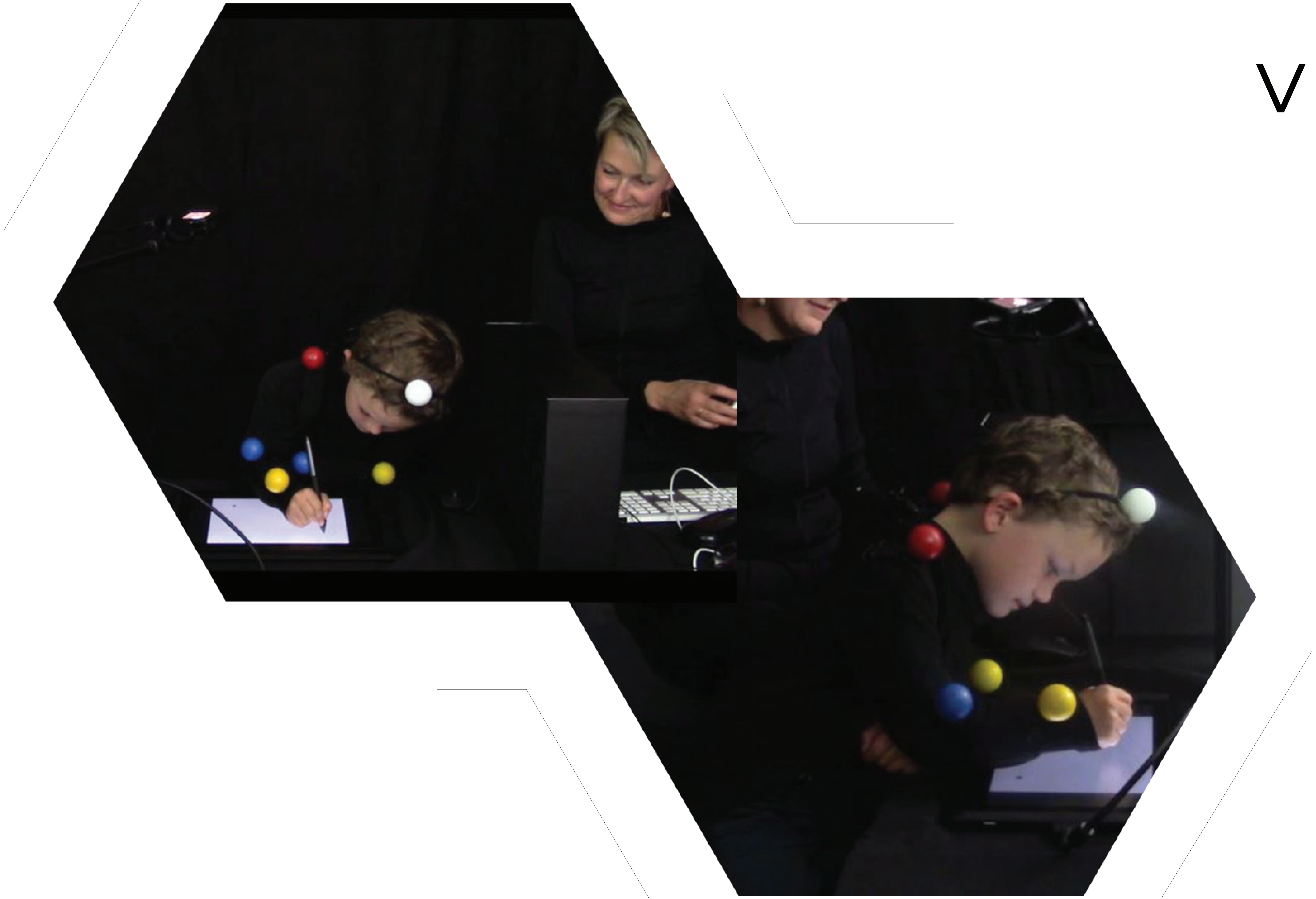
UPEC M1 BIOMETRICS | SIKUM LIMBU

3/29/2019

explanation

Started with importing all the required libraries

csv
cv2
numpy
matplotlib
pandas



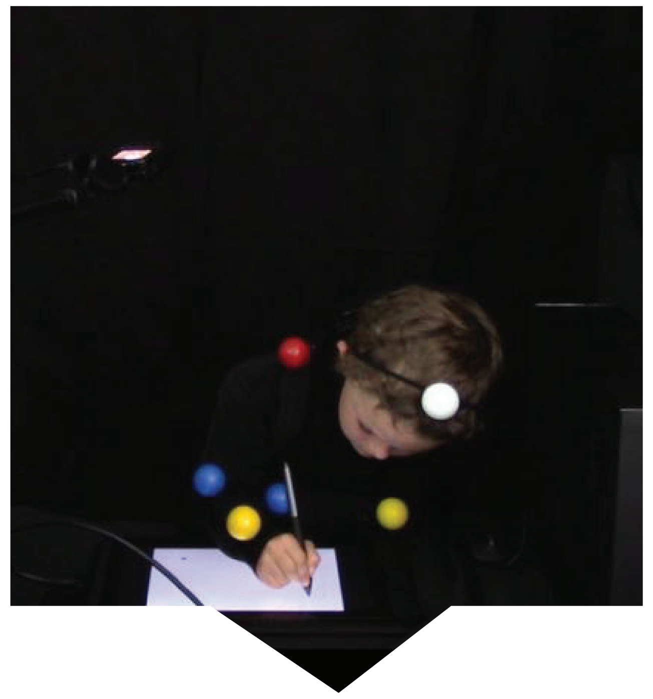
video file settings

To take a video we create a VideoCapture object and gave the file/ path name

Device Index can also be used for real time video

frames

capturing



infinite loop is used to capture the frames in every instance and is open during the entire course of the program

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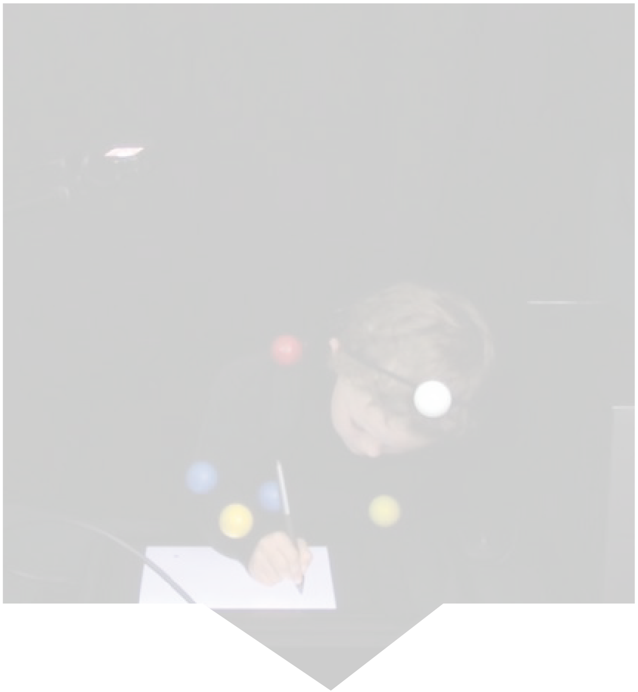

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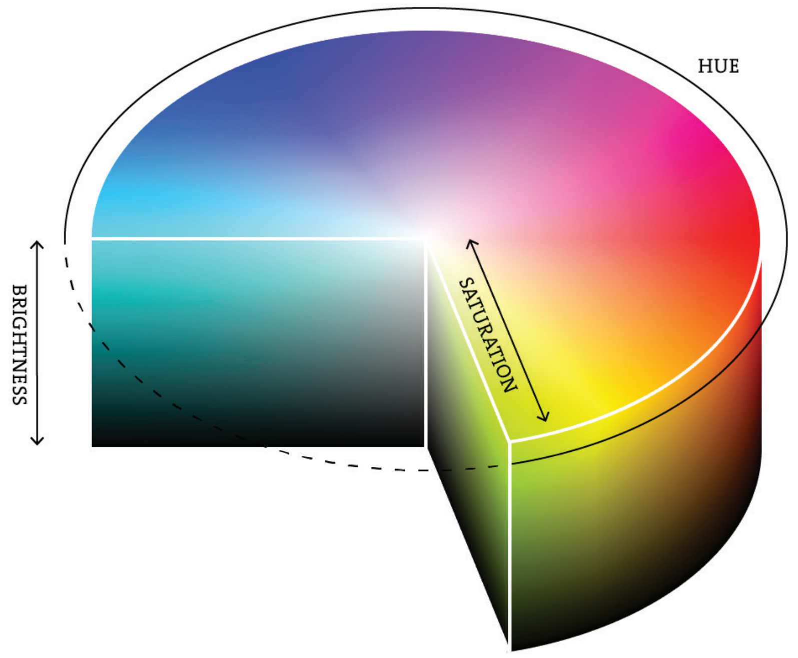
converting to hsv color space



after capturing the video frame by frame, converting it to BGR color space to HSV.

there are more than 150 color space conversion method in OpenCV

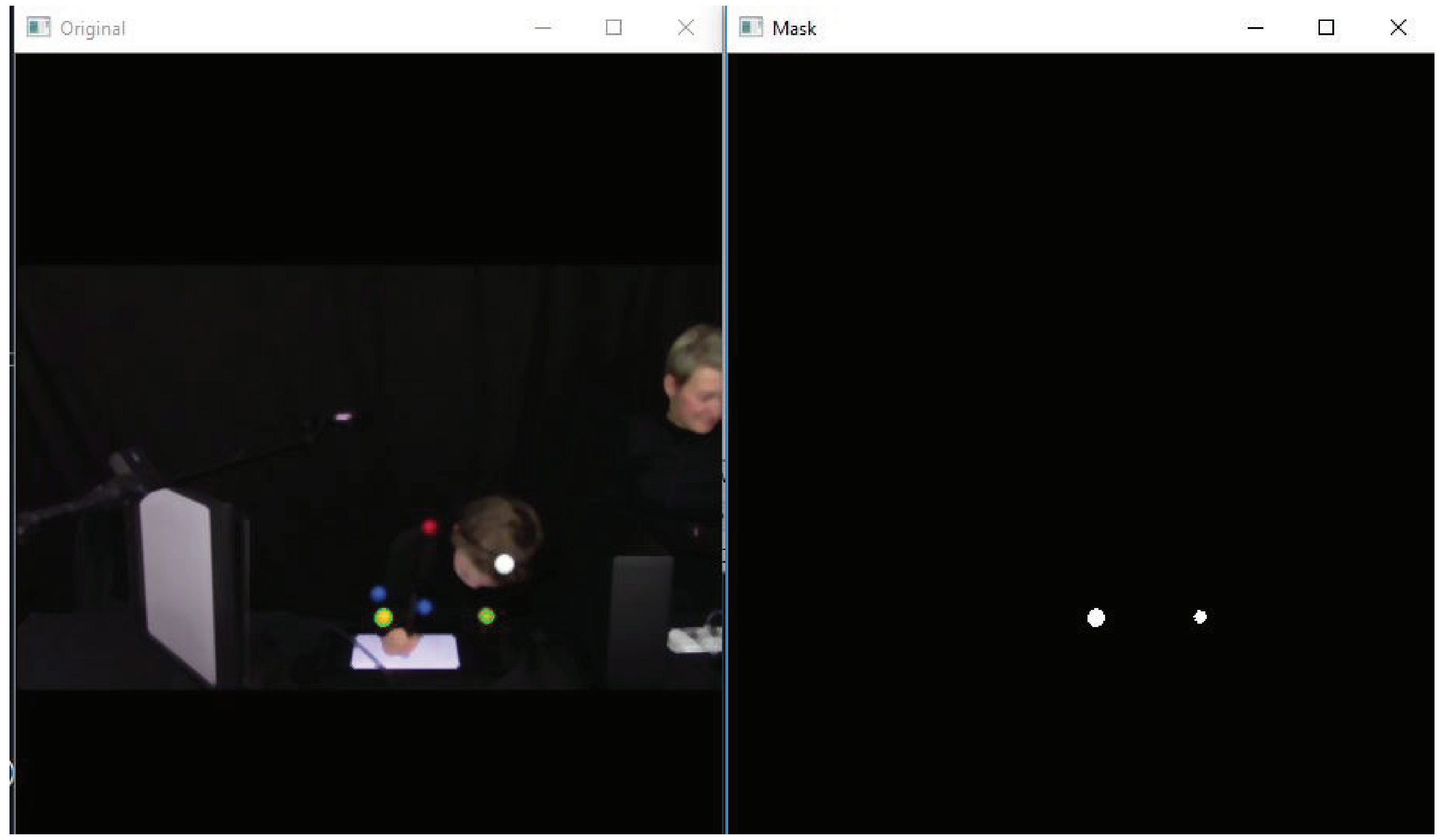
we use function

cv2.cvtColor(input_image,flag)

masking technique

masking is creating some specific region of image following certain rules.

here I am creating a mask that comprises of an object in "selected" color



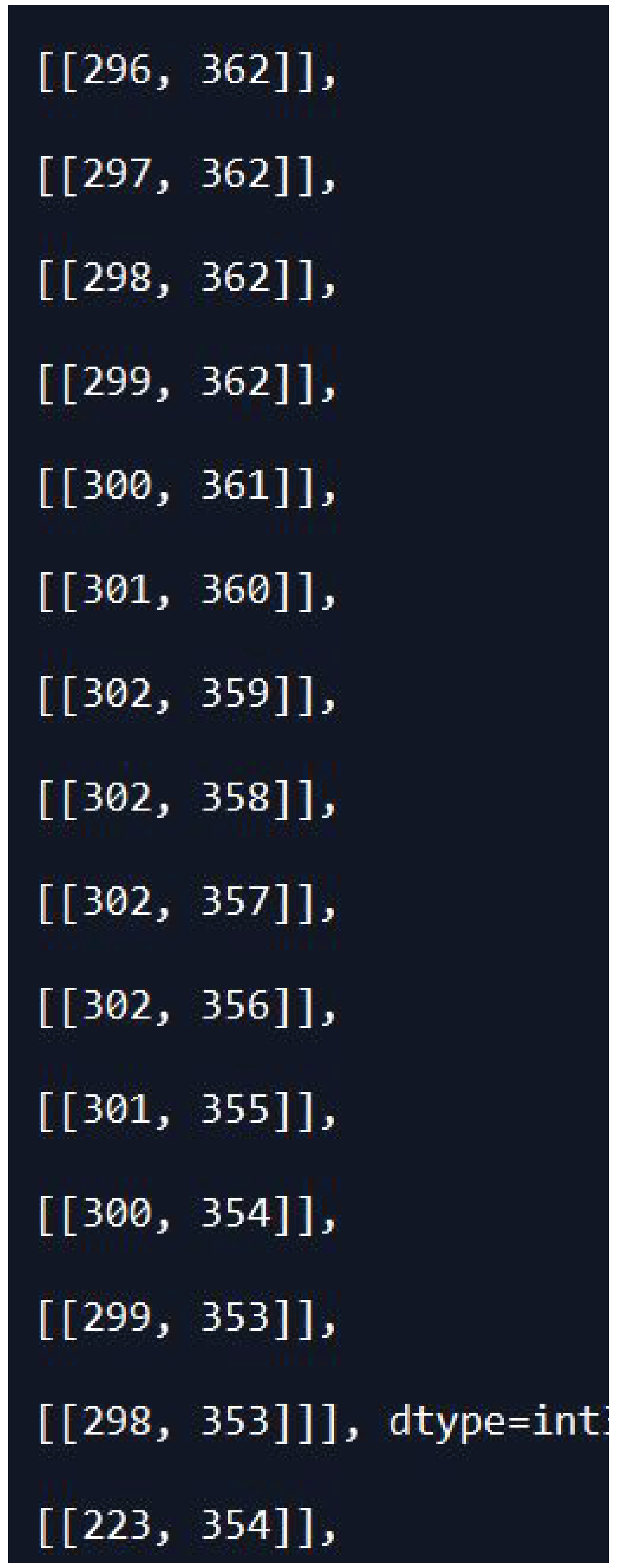
finding contours

after having the mask frame, we can proceed with finding contours

the third parameter, contour approximation method, will collect only the endpoint coordinates of straight lines.

all the white blobs in the mask will have contours applied.

coordinates



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[[296, 362]],

[[297, 362]],

[[298, 362]],

[[299, 362]],

[[300, 361]],

[[301, 360]],

[[302, 359]],

[[302, 358]],

[[302, 357]],

[[302, 356]],

[[301, 355]],

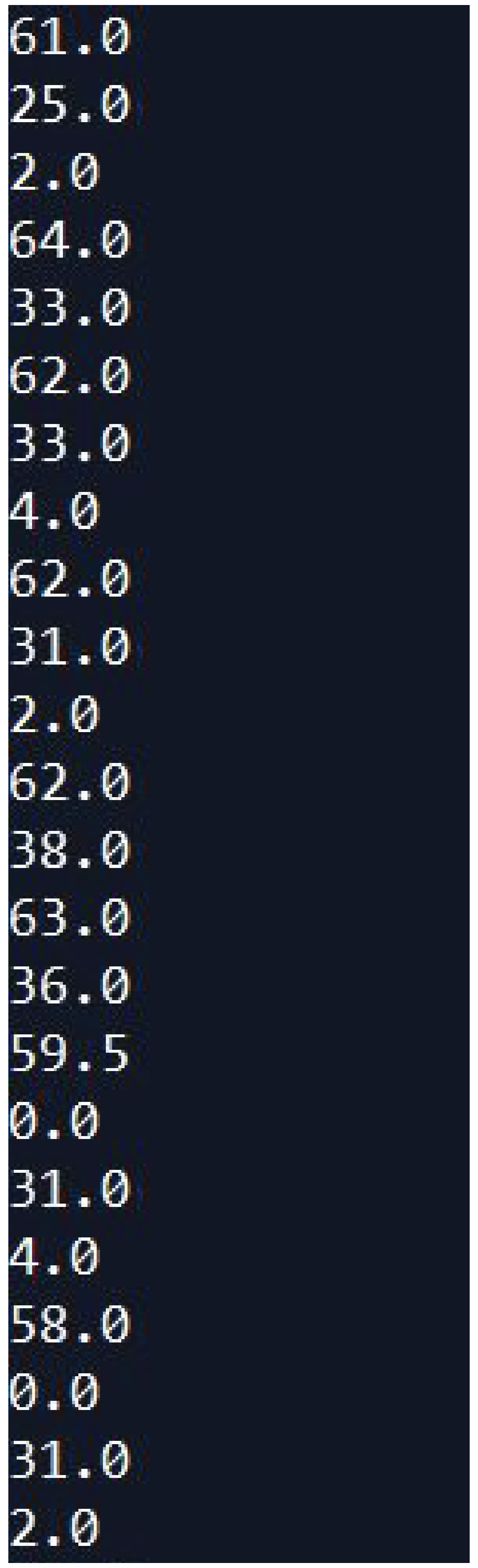
[[300, 354]],

[[299, 353]],

[[298, 353]]], dtype=int

[[223, 354]],
```

areas



```
61.0
25.0
2.0
64.0
33.0
62.0
33.0
4.0
62.0
31.0
2.0
62.0
38.0
63.0
36.0
59.5
0.0
31.0
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58.0
0.0
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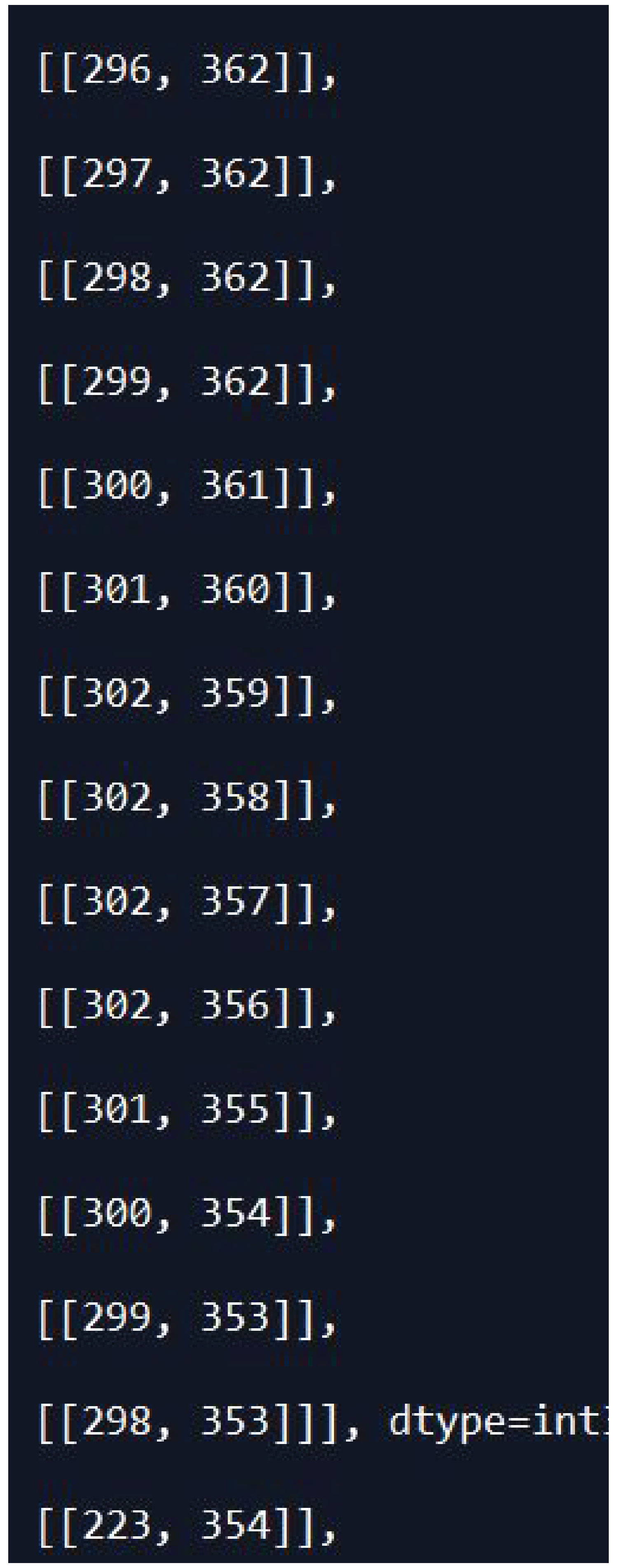

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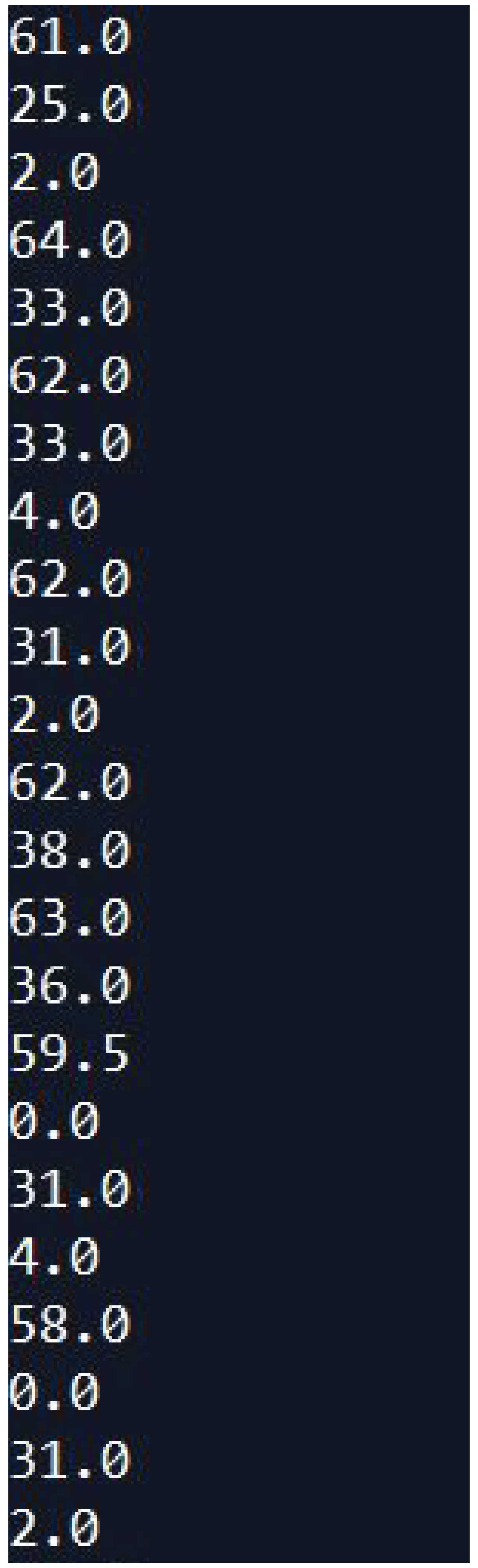

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creating .csv file

In Python we use csv.writer() module to write data into csv files.

This module is similar to the csv.reader() module.

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fname = "output.csv"
with open(fname,'w',newline='') as f:
   writer = csv.writer(f)
   for row in contours:
      writer.writerow(row)
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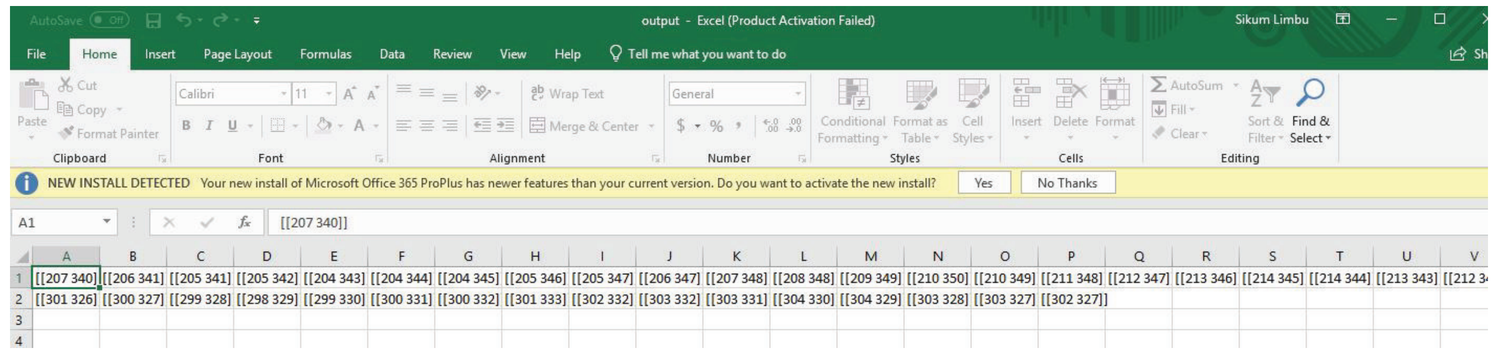

NEW INSTALL DETECTED Your new install of Microsoft Office 365 ProPlus has newer features than your current version. Do you want to activate the new install?

A1: [[207 340]]

	A	B	C	D	E	F	G	H	I	J	K
1	[[207 340]	[[206 341]	[[205 341]	[[205 342]	[[204 343]	[[204 344]	[[204 345]	[[205 346]	[[205 347]	[[206 347]	[[207 348]
2	[[301 326]	[[300 327]	[[299 328]	[[298 329]	[[299 330]	[[300 331]	[[300 332]	[[301 333]	[[302 332]	[[303 332]	[[303 331]
3											
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	L	M	N	O	P	Q	R	S	T	U	V
1	[[208 348]	[[209 349]	[[210 350]	[[210 349]	[[211 348]	[[212 347]	[[213 346]	[[214 345]	[[214 344]	[[213 343]	[[212 3
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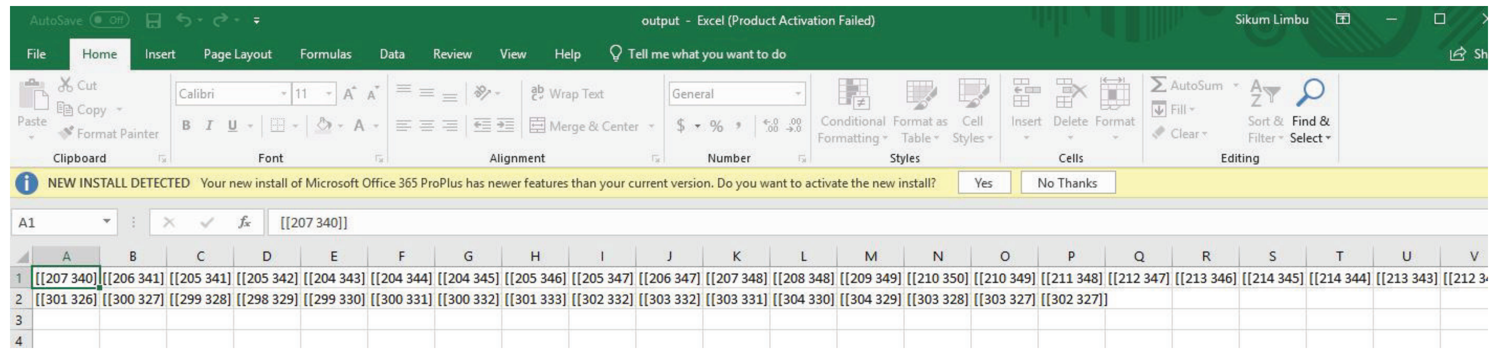

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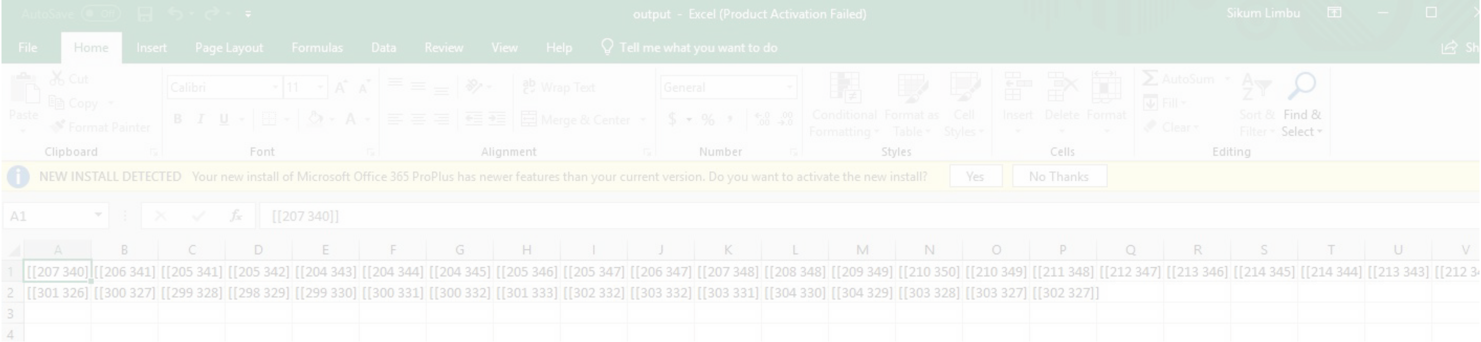

output - Excel (Product Activation Failed)

Sikum Limbu

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Using the CSV module,
we can import, read it, and extract the data
such as the x-axis data and the y-axis data

We can then use matplotlib in order to plot
the graph of the extracted data.

plotting .csv file

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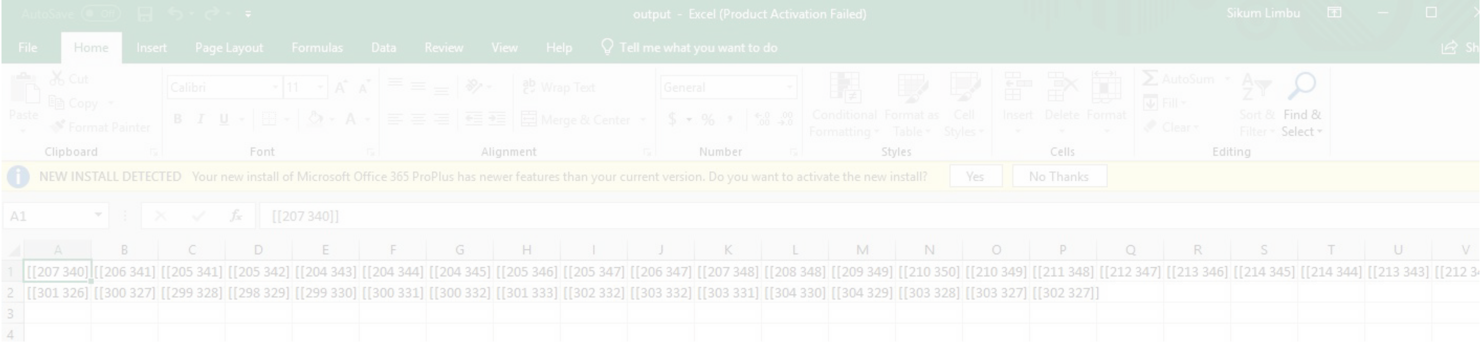

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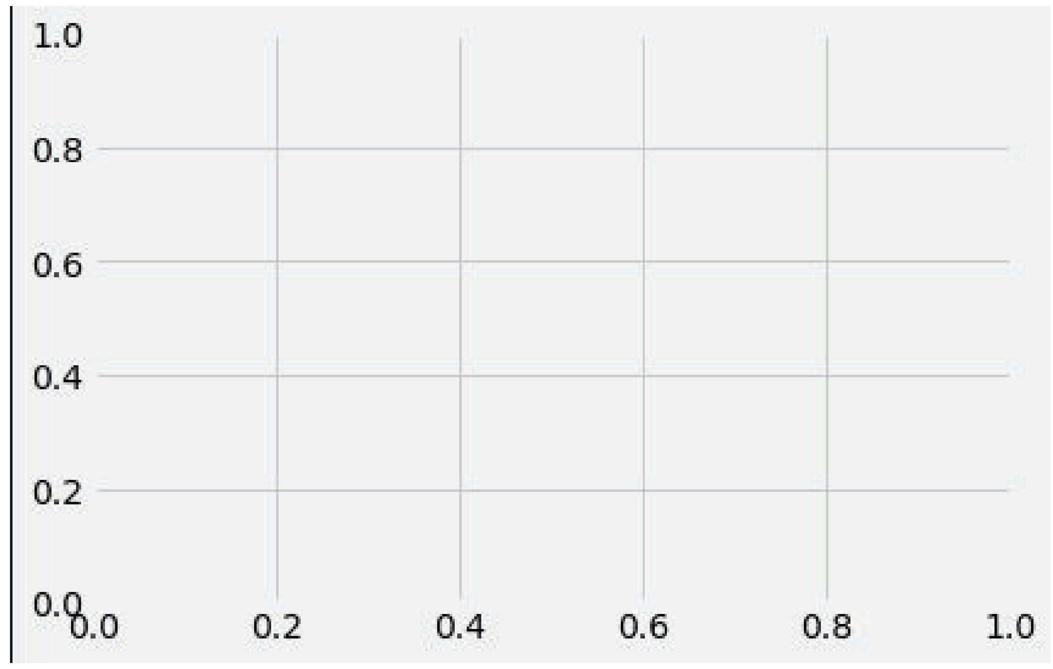

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