

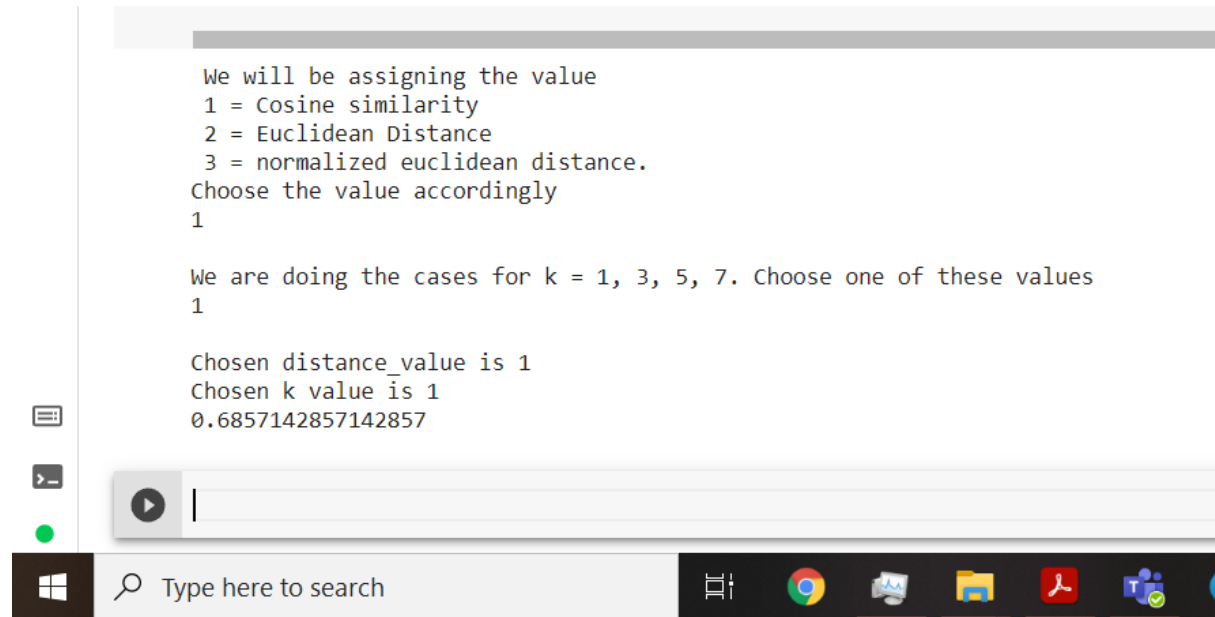
Cosine Similarity

K = 1

```
We will be assigning the value
1 = Cosine similarity
2 = Euclidean Distance
3 = normalized euclidean distance.
Choose the value accordingly
1

We are doing the cases for k = 1, 3, 5, 7. Choose one of these values
1

Chosen distance_value is 1
Chosen k value is 1
0.6857142857142857
```

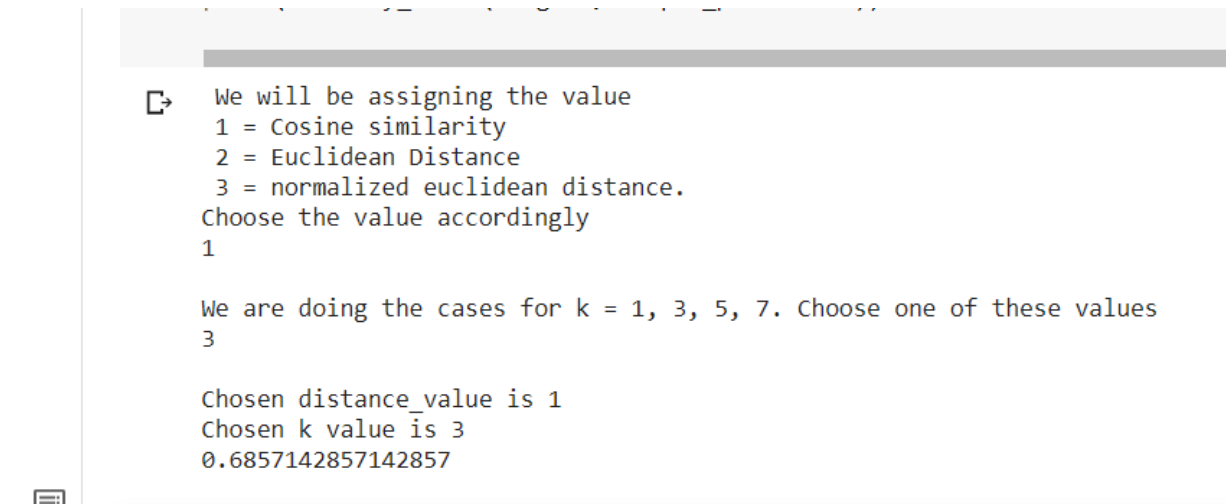


K = 3

```
We will be assigning the value
1 = Cosine similarity
2 = Euclidean Distance
3 = normalized euclidean distance.
Choose the value accordingly
1

We are doing the cases for k = 1, 3, 5, 7. Choose one of these values
3

Chosen distance_value is 1
Chosen k value is 3
0.6857142857142857
```



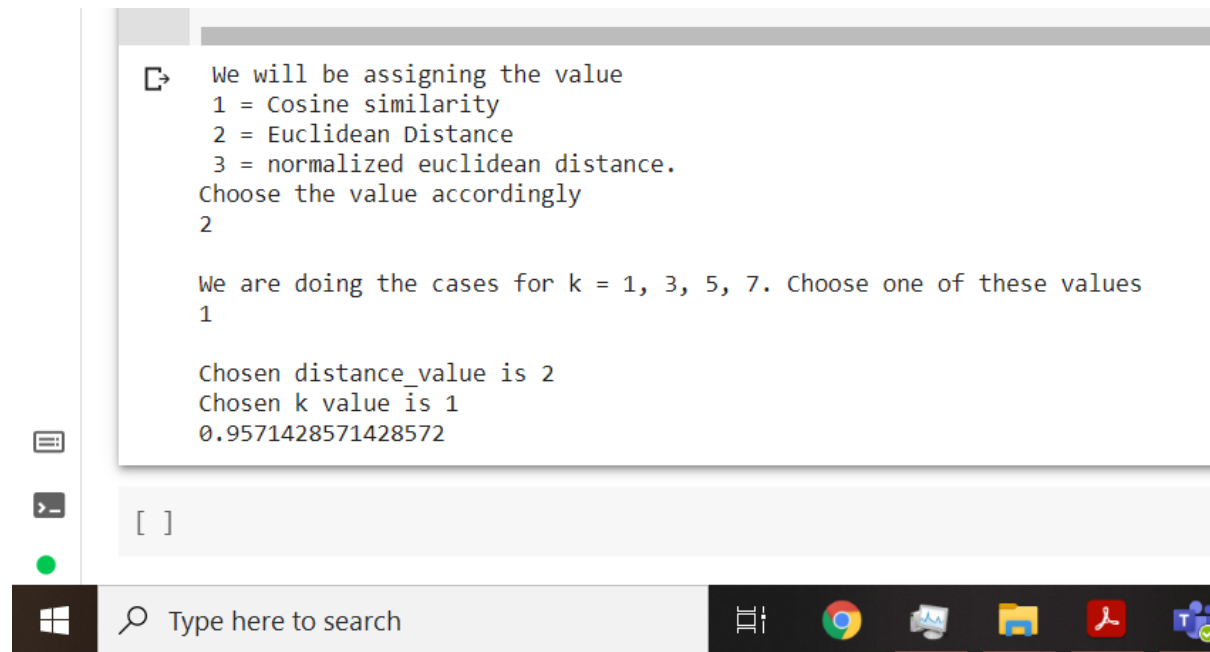
K = 5



0.6857142857142857

Euclidean Distance

K = 1



The screenshot shows a Windows desktop environment. A terminal window is open, displaying the following text:

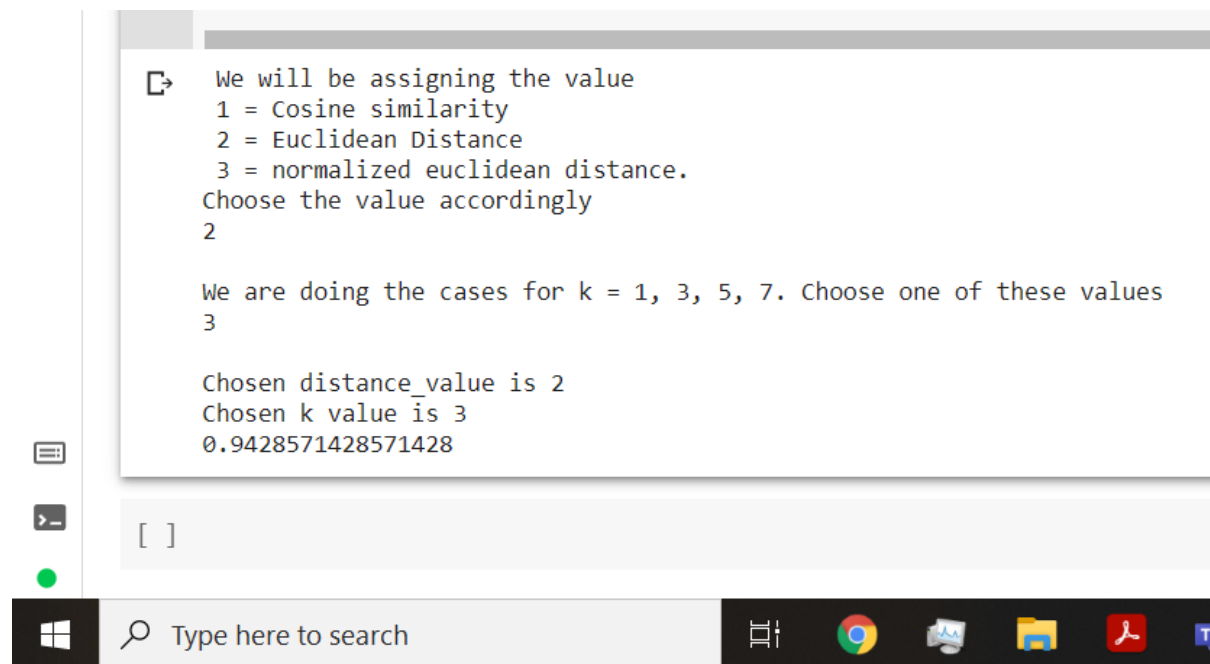
```
➤ We will be assigning the value
1 = Cosine similarity
2 = Euclidean Distance
3 = normalized euclidean distance.
Choose the value accordingly
2

We are doing the cases for k = 1, 3, 5, 7. Choose one of these values
1

Chosen distance_value is 2
Chosen k value is 1
0.9571428571428572
```

Below the terminal window, the Windows taskbar is visible, featuring the search bar with the text "Type here to search" and several application icons including Chrome, File Explorer, and Microsoft Word.

K = 3



The screenshot shows a Windows desktop environment. A terminal window is open, displaying the following text:

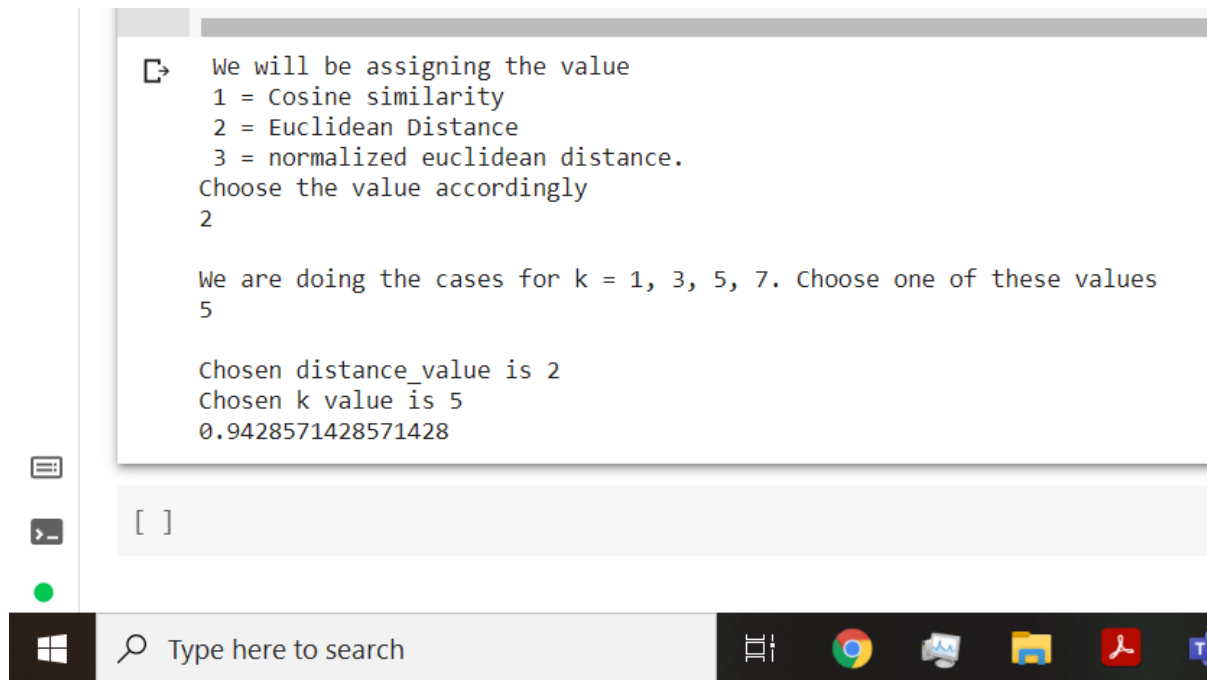
```
➤ We will be assigning the value
1 = Cosine similarity
2 = Euclidean Distance
3 = normalized euclidean distance.
Choose the value accordingly
2

We are doing the cases for k = 1, 3, 5, 7. Choose one of these values
3

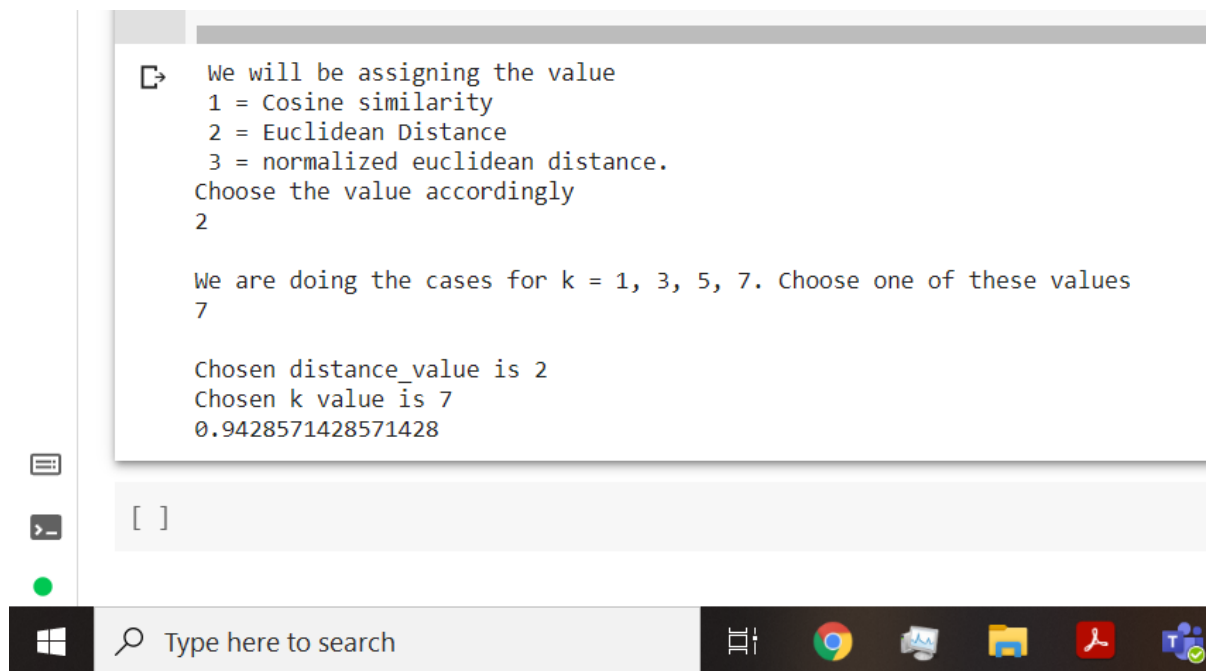
Chosen distance_value is 2
Chosen k value is 3
0.9428571428571428
```

Below the terminal window, the Windows taskbar is visible, featuring the search bar with the text "Type here to search" and several application icons including Chrome, File Explorer, and Microsoft Word.

K = 5



K = 7



Normalized Euclidean Distance

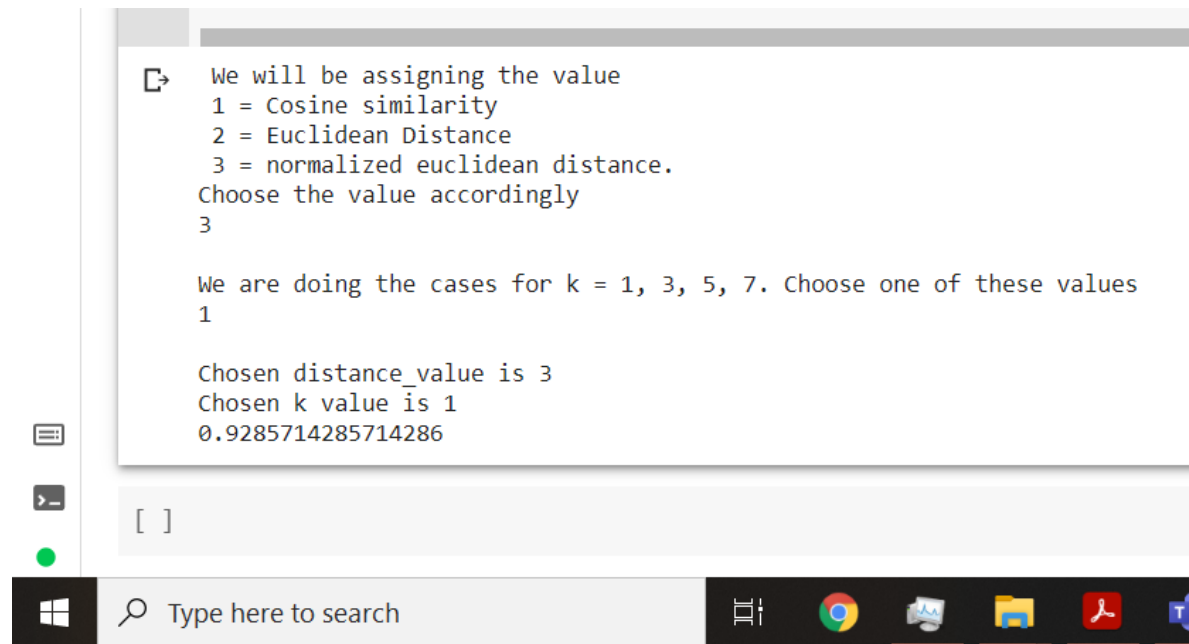
K = 1

```

We will be assigning the value
1 = Cosine similarity
2 = Euclidean Distance
3 = normalized euclidean distance.
Choose the value accordingly
3

We are doing the cases for k = 1, 3, 5, 7. Choose one of these values
1

Chosen distance_value is 3
Chosen k value is 1
0.9285714285714286
[ ]
```



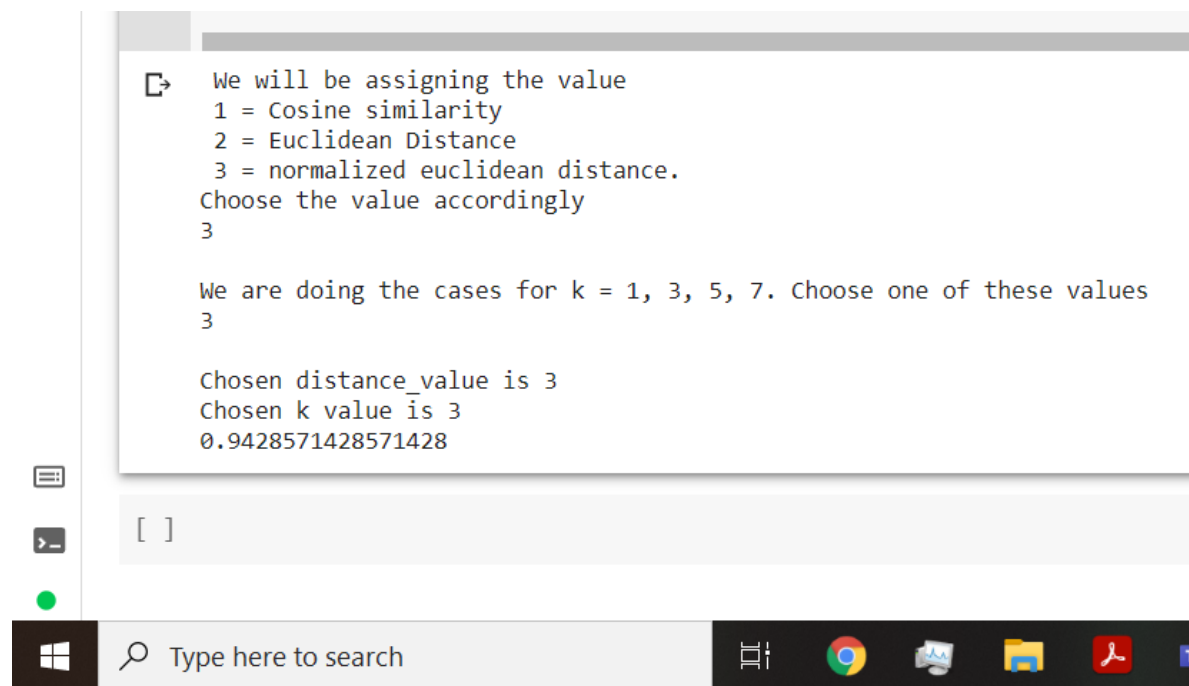
K = 3

```

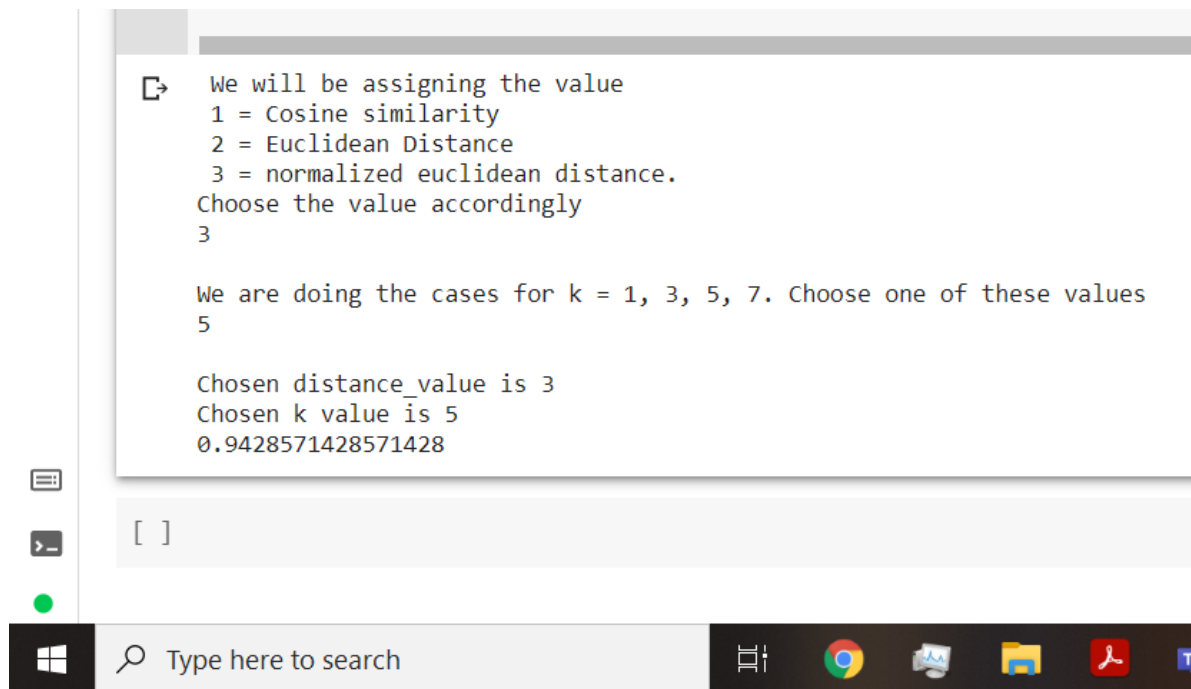
We will be assigning the value
1 = Cosine similarity
2 = Euclidean Distance
3 = normalized euclidean distance.
Choose the value accordingly
3

We are doing the cases for k = 1, 3, 5, 7. Choose one of these values
3

Chosen distance_value is 3
Chosen k value is 3
0.9428571428571428
[ ]
```



K = 5



K = 7

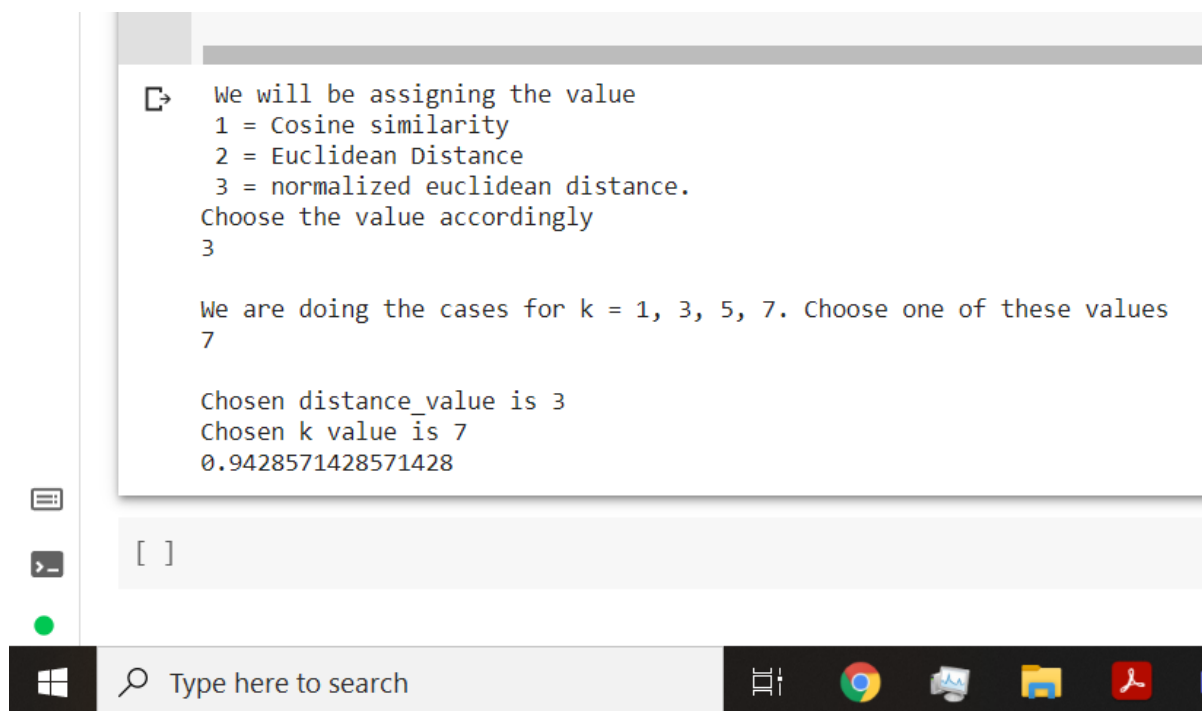


Table of Results

	Cosine Similarity	Euclidean Distance	Normalized Euclidean Distance
K = 1	68.57%	95.71%	92.86%
K = 3	68.57%	94.29%	94.29%
K = 5	68.57%	94.29%	94.29%
K = 7	68.57%	94.29%	94.29%

Analysis and Conclusions

- We find that the best accuracy is found for Euclidean distance, with $k = 1$.
- The accuracy decreases as the k value increase, due to overfitting (except for Normalized Euclidean Distance).
- The accuracy seems to not change after a while
- The time taken for compiling(complexity) is least for cosine similarity and least for Euclidean distance metric.