

solution behind biological aging. x

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```
[ ] from sklearn import metrics
import matplotlib.pyplot as plt
import numpy as np
import seaborn as sns
from sklearn.utils import resample
from sklearn import preprocessing
```

[] parkin_df = pd.read_csv("/content/pd_speech_features.csv")
parkin_df.head()

	id	gender	PPE	DFA	RPDE	numPulses	numPeriodsPulses	meanPeriodPulses	stdDevPeriodPulses	locPctJitter	...	tqwt_kurtosisValue_dec_28	tqwt_kurtosisValue_dec_28
0	0	1	0.85247	0.71826	0.57227	240	239	0.008064	0.000087	0.00218	...	1.5620	1.5620
1	0	1	0.76686	0.69481	0.53966	234	233	0.008258	0.000073	0.00195	...	1.5589	1.5589
2	0	1	0.85083	0.67604	0.58982	232	231	0.008340	0.000060	0.00176	...	1.5643	1.5643
3	1	0	0.41121	0.79672	0.59257	178	177	0.010858	0.000183	0.00419	...	3.7805	3.7805
4	1	0	0.32790	0.79782	0.53028	236	235	0.008162	0.002669	0.00535	...	6.1727	6.1727

5 rows x 755 columns

```
[ ] parkin_df.tail()
```

	DFA	RPDE	numPulses	numPeriodsPulses	meanPeriodPulses	stdDevPeriodPulses	locPctJitter	...	tqwt_kurtosisValue_dec_28	tqwt_kurtosisValue_dec_28
0	0.56355	0.28385	417	416	0.004627	0.000052	0.00064	...	3.0706	3.0706

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aging.ipynb ☆

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```
[9] columns: 755 entries, id to cross  
dtypes: float64(749), int64(6)  
memory usage: 4.4 MB
```

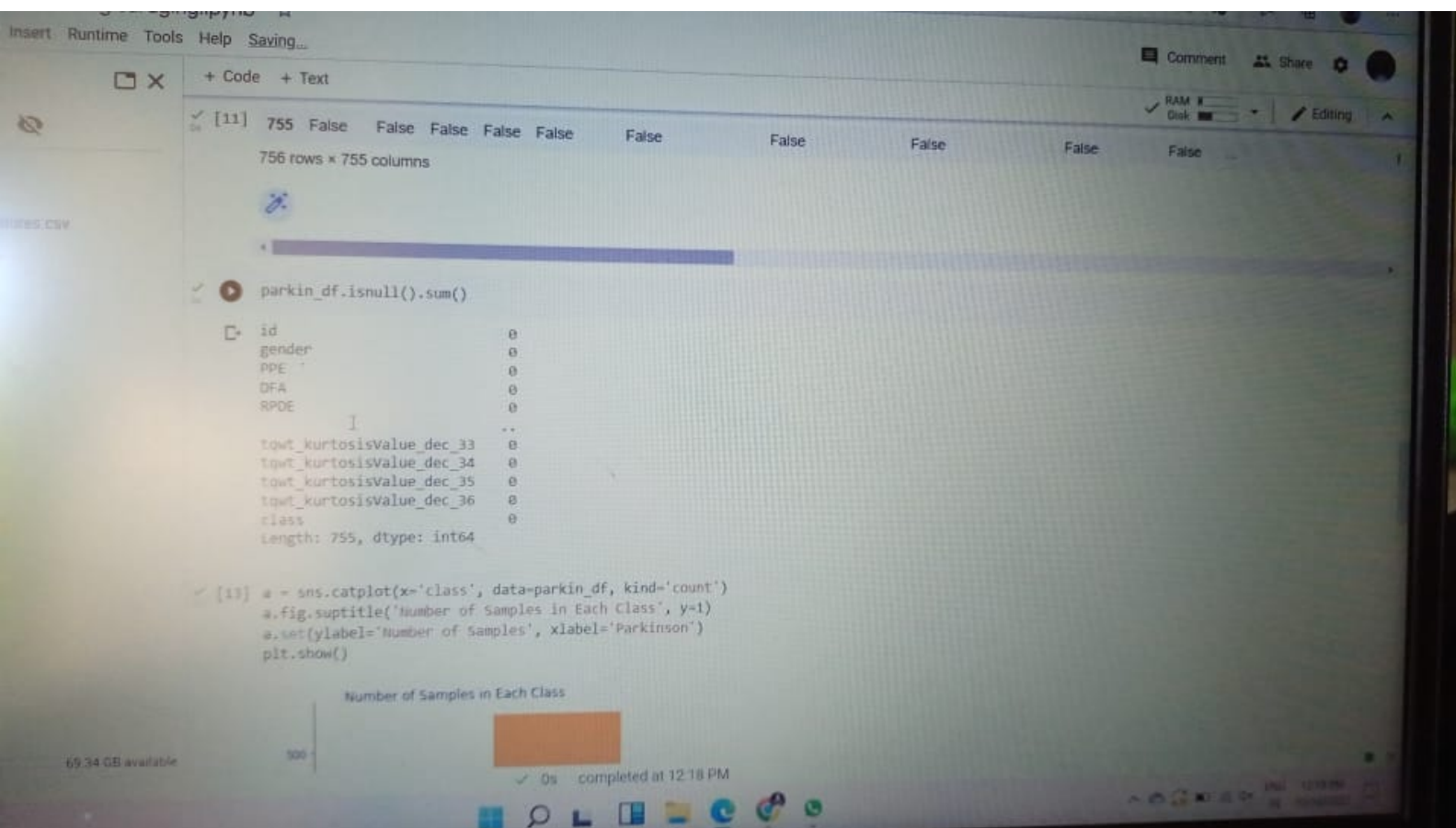
```
parkin_df.describe()
```

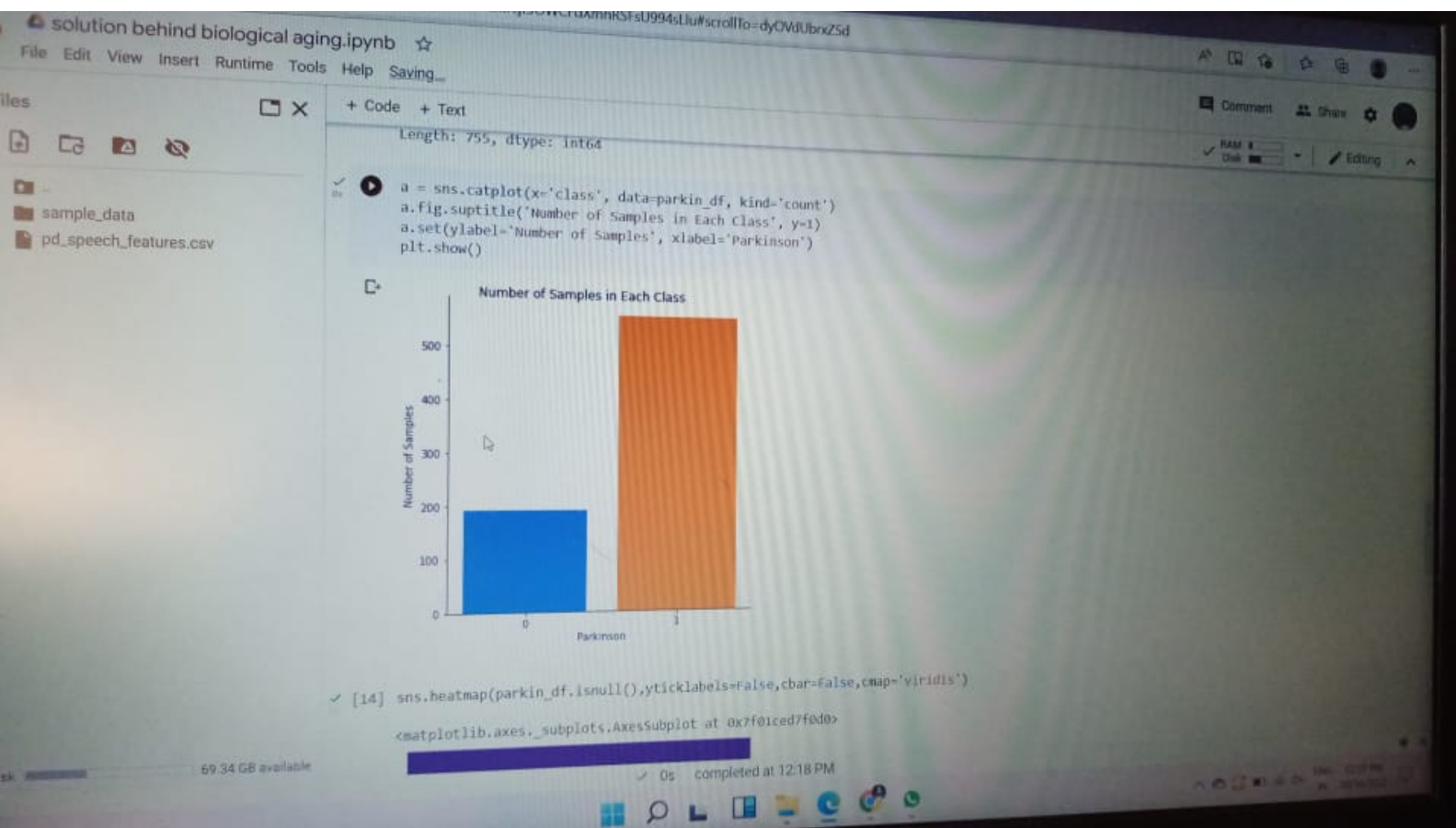
	id	gender	PPE	DFA	RPDE	numPulses	numPeriodsPulses	meanPeriodPulses	stdDevPeriodPulses	locPctJitter
count	756.000000	756.000000	756.000000	756.000000	756.000000	756.000000	756.000000	756.000000	756.000000	756.000000
mean	125.500000	0.515873	0.746284	0.700414	0.489058	323.972222	322.678571	0.006360	0.000383	0.002324
std	72.793721	0.500079	0.169294	0.069718	0.137442	99.219059	99.402499	0.001828	0.000728	0.002828
min	0.000000	0.000000	0.041551	0.543500	0.154300	2.000000	1.000000	0.002107	0.000011	0.000210
25%	62.750000	0.000000	0.762833	0.647053	0.386537	251.000000	250.000000	0.005003	0.000049	0.000970
50%	125.500000	1.000000	0.809655	0.700525	0.484355	317.000000	316.000000	0.006048	0.000077	0.001498
75%	188.250000	1.000000	0.834315	0.754985	0.586515	384.250000	383.250000	0.007528	0.000171	0.002520
max	251.000000	1.000000	0.907660	0.852640	0.871230	907.000000	905.000000	0.012968	0.003483	0.027750

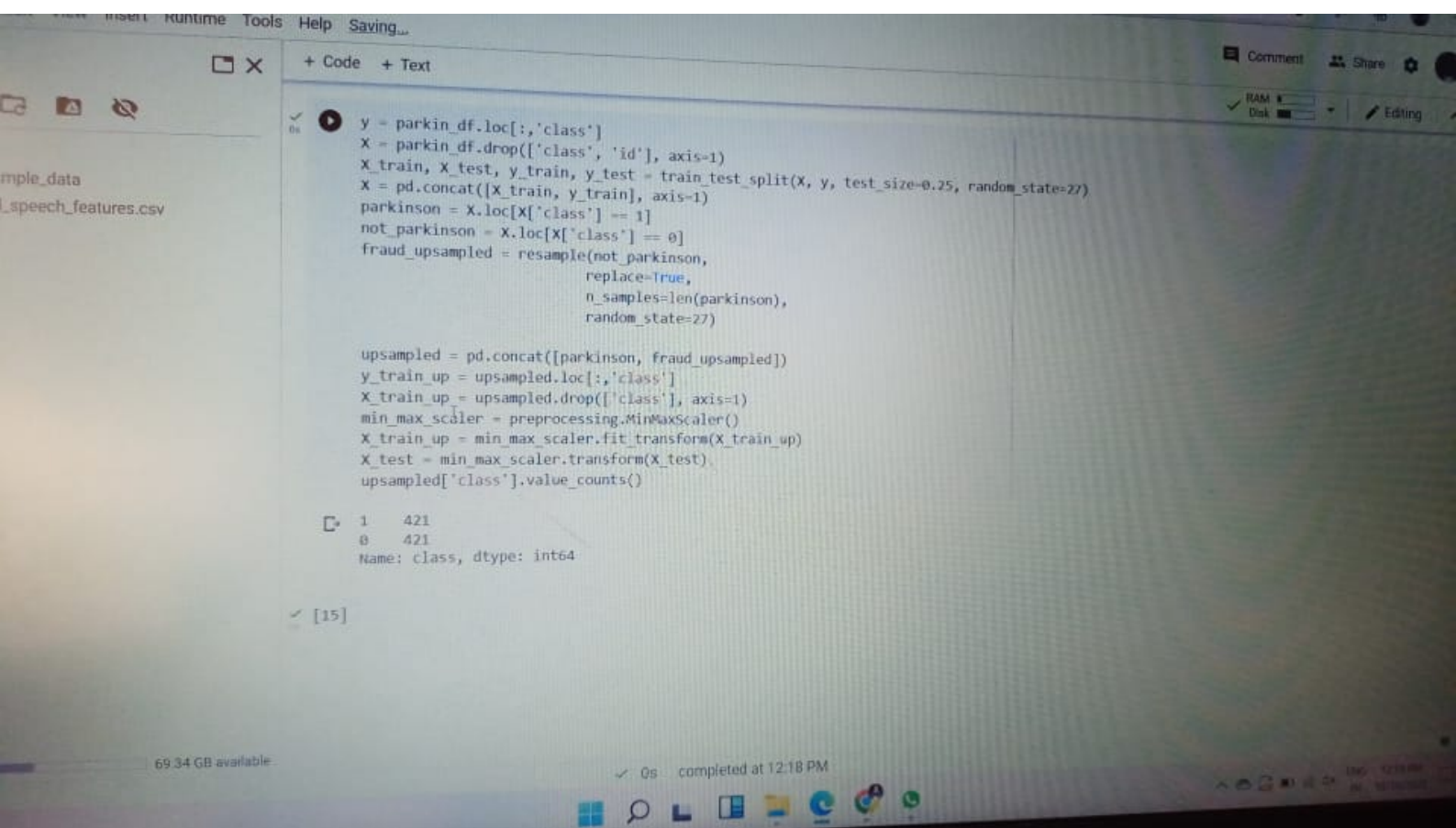
8 rows × 755 columns



```
[11] parkin_df.isnull()
```







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RAM Disk

parkin_df.isnull()

	id	gender	PPE	DFA	RPDE	numPulses	numPeriodsPulses	meanPeriodPulses	stdDevPeriodPulses	locPctJitter	...	tqwt_kurtosisValue_de
0	False	False	False	False	False	False	False	False	False	False	...	1
1	False	False	False	False	False	False	False	False	False	False	...	1
2	False	False	False	False	False	False	False	False	False	False	...	1
3	False	False	False	False	False	False	False	False	False	False	...	1
4	False	False	False	False	False	False	False	False	False	False	...	1
...
751	False	False	False	False	False	False	False	False	False	False	...	1
752	False	False	False	False	False	False	False	False	False	False	...	1
753	False	False	False	False	False	False	False	False	False	False	...	1
754	False	False	False	False	False	False	False	False	False	False	...	1
755	False	False	False	False	False	False	False	False	False	False	...	1

756 rows x 755 columns

[12] parkin_df.isnull().sum()

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(756, 755)

parkin_df.dtypes

```
id                int64
gender            int64
PPE              float64
DFA              float64
RPDE             float64
...
tqwt_kurtosisValue_dec_33  float64
tqwt_kurtosisValue_dec_34  float64
tqwt_kurtosisValue_dec_35  float64
tqwt_kurtosisValue_dec_36  float64
class            int64
Length: 755, dtype: object
```

[9] parkin_df.info()

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 756 entries, 0 to 755
Columns: 755 entries, id to class
dtypes: float64(749), int64(6)
memory usage: 4.4 MB
```

parkin_df.describe()

	id	gender	PPE	DFA	RPDE	numPulses	numPeriodsPulses	meanPeriodPulses	stdDevPeriodPulses	locPctJitter
count	756.000000	756.000000	756.000000	756.000000	756.000000	756.000000	756.000000	756.000000	756.000000	756.000000
mean	125.500000	0.515873	0.746284	0.700414	0.489058	323.872222	322.678571	0.006360	0.000383	0.000000

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```
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import matplotlib.pyplot as plt
import numpy as np
import seaborn as sns
from sklearn.utils import resample
from sklearn import preprocessing

parkin_df = pd.read_csv("/content/pd_speech_features.csv")
parkin_df.head()
```

id	gender	PPE	DFA	RPDE	numPulses	numPeriodsPulses	meanPeriodPulses	stdDevPeriodPulses	locPctJitter	...	tqwt_kurtosisValue_dec_28	tqwt_kurtosisValue_dec_28
0	0	1	0.85247	0.71826	0.57227	240	239	0.008064	0.000067	0.00218	...	1.5620
1	0	1	0.76686	0.69481	0.53966	234	233	0.008258	0.000073	0.00195	...	1.5589
2	0	1	0.85083	0.67604	0.56982	232	231	0.008340	0.000060	0.00176	...	1.5643
3	1	0	0.41121	0.79672	0.59257	178	177	0.010858	0.000183	0.00419	...	3.7805
4	1	0	0.32790	0.79782	0.53028	236	235	0.008162	0.002669	0.00535	...	6.1727

Rows = 755 columns

```
parkin_df.tail()
```

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DFA	RPDE	numPulses	numPeriodsPulses	meanPeriodPulses	stdDevPeriodPulses	locPctJitter	...	tqwt_kurtosisValue_dec_28	tqwt_kurtosisValue_dec_28
0.56355	0.28385	417	416	0.004827	0.000052	0.00064	...	3.0706	3.0706

```
✓ [ ] parkin_df.tail()
```

[5]

	id	gender	PPE	DFA	RPDE	numPulses	numPeriodsPulses	meanPeriodPulses	stdDevPeriodPulses	locPctJitter	...	tqwt_kurtosisValue_dec_28	tqwt_kurtosisVa
751	250	0	0.80903	0.56355	0.28385	417	416	0.004627	0.000052	0.00064	...	3.0706	
752	250	0	0.16084	0.56499	0.59194	415	413	0.004550	0.000220	0.00143	...	1.9704	
753	251	0	0.88389	0.72335	0.46815	381	380	0.005069	0.000103	0.00076	...	51.5607	
754	251	0	0.83782	0.74890	0.49823	340	339	0.005679	0.000055	0.00092	...	19.1607	
755	251	0	0.81304	0.76471	0.46374	340	339	0.005676	0.000037	0.00078	...	62.9927	

5 rows × 755 columns

```
✓ [ ] parkin_df.shape
```

(756, 755)

```
✓ [ ] parkin_df.dtypes
```

```
<> id          int64
    gender      int64
    PPE         float64
    DFA         float64
    RPDE        float64
    numPulses   float64
```

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(756, 755)

✓ parkin_df.dtypes

```
id                int64
gender            int64
PPE              float64
DFA              float64
RPDE             float64
...
tqwt_kurtosisValue_dec_33 float64
tqwt_kurtosisValue_dec_34 float64
tqwt_kurtosisValue_dec_35 float64
tqwt_kurtosisValue_dec_36 float64
class            int64
length: 755, dtype: object
```

✓ [9] parkin_df.info()

```
<<class 'pandas.core.frame.DataFrame'>
RangeIndex: 756 entries, 0 to 755
Columns: 755 entries, id to class
dtypes: float64(749), int64(6)
memory usage: 4.4 MB
```

✓ parkin_df.describe()

id	gender	PPE	DFA	RPDE	numPulses	numPeriodsPulses	meanPeriodPulses	stdDevPeriodPulses	lacPctHitter
----	--------	-----	-----	------	-----------	------------------	------------------	--------------------	--------------

A screenshot of the Windows taskbar showing the RAM Disk icon. The icon is a small square with a checkmark and the text "RAM Disk" and "Editing" next to it.

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ng.ipynb ☆

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RAM 11.5 GB Disk 1.2 GB Editing

parkin_df.isnull()

	id	gender	PPE	DFA	RPDE	numPulses	numPeriodsPulses	meanPeriodPulses	stdDevPeriodPulses	locPctJitter	...	tort_kurtosisValue_de
0	False	False	False	False	False	False	False	False	False	False	...	...
1	False	False	False	False	False	False	False	False	False	False	...	...
2	False	False	False	False	False	False	False	False	False	False	...	...
3	False	False	False	False	False	False	False	False	False	False	...	...
4	False	False	False	False	False	False	False	False	False	False	...	...
...
751	False	False	False	False	False	False	False	False	False	False	...	...
752	False	False	False	False	False	False	False	False	False	False	...	...
753	False	False	False	False	False	False	False	False	False	False	...	...
754	False	False	False	False	False	False	False	False	False	False	...	...
755	False	False	False	False	False	False	False	False	False	False	...	...

756 rows x 755 columns

