```
In [12]: import pandas as pd
         book=pd.read_csv("E:\\downloads\\apple.txt",error_bad_lines=False)
```

```
C:\Users\prash\AppData\Local\Temp\ipykernel_2840\3742524737.py:2: FutureWarning: The error_bad_lines argument has been deprecated and will be removed in a future version. Use on_bad_lines in the future.


  book=pd.read_csv("E:\\downloads\\apple.txt",error_bad_lines=False)
b'Skipping line 6: expected 1 fields, saw 14\n'
```

```
In [13]: "    furhufi.   ".strip()

Out[13]: 'furhufi.'
```

```
In [14]: book=[x.strip() for x in book]
         book=[x for x in book if x]
         book[0]

Out[14]: 'x'
```

```
In [25]: import numpy as np
         import pandas as pd
         import string
         import spacy
         from matplotlib.pyplot import imread
         from wordcloud import wordcloud
```

```
In [18]:  pip install wordcloud
```

```
Collecting wordcloud
  Downloading wordcloud-1.8.2.2-cp39-cp39-win_amd64.whl (153 kB)
Requirement already satisfied: pillow in c:\users\prash\anaconda\lib\site-packages (from wordcloud) (9.0.1)
Requirement already satisfied: numpy>=1.6.1 in c:\users\prash\anaconda\lib\site-packages (from wordcloud) (1.21.5)
Requirement already satisfied: matplotlib in c:\users\prash\anaconda\lib\site-packages (from wordcloud) (3.5.1)
Requirement already satisfied: pyparsing>=2.2.1 in c:\users\prash\anaconda\lib\site-packages (from matplotlib->wordcloud) (3.0.4)
Requirement already satisfied: kiwisolver>=1.0.1 in c:\users\prash\anaconda\lib\site-packages (from matplotlib->wordcloud) (1.3.2)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\prash\anaconda\lib\site-packages (from matplotlib->wordcloud) (2.8.2)
Requirement already satisfied: packaging>=20.0 in c:\users\prash\anaconda\lib\site-packages (from matplotlib->wordcloud) (21.3)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\prash\anaconda\lib\site-packages (from matplotlib->wordcloud) (4.25.0)
Requirement already satisfied: cycler>=0.10 in c:\users\prash\anaconda\lib\site-packages (from matplotlib->wordcloud) (0.11.0)
Requirement already satisfied: six>=1.5 in c:\users\prash\anaconda\lib\site-packages (from python-dateutil>=2.7->matplotlib->wordcloud) (1.16.0)
Installing collected packages: wordcloud
Successfully installed wordcloud-1.8.2.2
Note: you may need to restart the kernel to use updated packages.
```

```
In [16]: from wordcloud import wordcloud
```

```
In [20]: !python -m spacy download en_core_web_md
```

```
Collecting en-core-web-md==3.3.0
  Downloading https://github.com/explosion/spacy-models/releases/download/en_core_web_md-3.3.0/en_core_web_md-3.3.0-py3-none-any.whl (33.5 MB)
Requirement already satisfied: spacy<3.4.0,>=3.3.0.dev0 in c:\users\prash\anaconda\lib\site-packages (from en-core-web-md==3.3.0) (3.3.1)
Requirement already satisfied: pydantic!=1.8,!=1.8.1,<1.9.0,>=1.7.4 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (1.8.2)
Requirement already satisfied: packaging>=20.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (21.3)
Requirement already satisfied: wasabi<1.1.0,>=0.9.1 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (0.9.1)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (1.0.7)
Requirement already satisfied: thinc<8.1.0,>=8.0.14 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (8.0.17)
Requirement already satisfied: preshed<3.1.0,>=3.0.2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (3.0.6)
Requirement already satisfied: srsly<3.0.0,>=2.4.3 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.4.3)
Requirement already satisfied: blis<0.8.0,>=0.4.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (0.7.8)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.0.7)
Requirement already satisfied: typer<0.5.0,>=0.3.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (0.4.2)
Requirement already satisfied: numpy>=1.15.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (1.21.5)
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.9 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (3.0.9)
Requirement already satisfied: pathy>=0.3.5 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (0.6.2)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.0.6)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (1.0.2)
Requirement already satisfied: setuptools in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (61.2.0)
Requirement already satisfied: jinja2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.11.3)
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (4.64.0)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (3.3.0)
Requirement already satisfied: requests<3.0.0,>=2.13.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.27.1)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in c:\users\prash\anaconda\lib\site-packages (from packaging>=20.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (3.0.4)
Requirement already satisfied: smart-open<6.0.0,>=5.2.1 in c:\users\prash\anaconda\lib\site-packages (from pathy>=0.3.5->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (5.2.1)
Requirement already satisfied: typing-extensions>=3.7.4.3 in c:\users\prash\anaconda\lib\site-packages (from pydantic!=1.8,!=1.8.1,<1.9.0,>=1.7.4->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.
0) (4.1.1)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2022.6.15)
Requirement already satisfied: idna<4,>=2.5 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (3.3)
Requirement already satisfied: charset-normalizer~=2.0.0 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.0.4)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (1.26.9)
Requirement already satisfied: colorama in c:\users\prash\anaconda\lib\site-packages (from tqdm<5.0.0,>=4.38.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (0.4.4)
Requirement already satisfied: click<9.0.0,>=7.1.1 in c:\users\prash\anaconda\lib\site-packages (from typer<0.5.0,>=0.3.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (8.0.4)
Requirement already satisfied: MarkupSafe>=0.23 in c:\users\prash\anaconda\lib\site-packages (from jinja2->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.1.1)
Installing collected packages: en-core-web-md
Successfully installed en-core-web-md-3.3.0
[+] Download and installation successful
You can now load the package via spacy.load('en_core_web_md')
2022-07-04 11:06:26.267745: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2022-07-04 11:06:26.267785: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not have a GPU set up on your machine.
```

```
In [27]: nlp=spacy.load("en_core_web_sm")
```

```
In [ ]:
```

```
In [28]: !python -m spacy download en_core_web_lg
         !python -m spacy download en_core_web_sm
```

```
Collecting en-core-web-lg==3.3.0
  Downloading https://github.com/explosion/spacy-models/releases/download/en_core_web_lg-3.3.0/en_core_web_lg-3.3.0-py3-none-any.whl (400.7 MB)
Requirement already satisfied: spacy<3.4.0,>=3.3.0.dev0 in c:\users\prash\anaconda\lib\site-packages (from en-core-web-lg==3.3.0) (3.3.1)
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.9 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (3.0.9)
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (4.64.0)
Requirement already satisfied: pathy>=0.3.5 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (0.6.2)
Requirement already satisfied: blis<0.8.0,>=0.4.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (0.7.8)
Requirement already satisfied: thinc<8.1.0,>=8.0.14 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (8.0.17)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (2.0.6)
Requirement already satisfied: pydantic!=1.8,!=1.8.1,<1.9.0,>=1.7.4 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (1.8.2)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (2.0.7)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (3.3.0)
Requirement already satisfied: requests<3.0.0,>=2.13.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (2.27.1)
Requirement already satisfied: wasabi<1.1.0,>=0.9.1 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (0.9.1)
Requirement already satisfied: jinja2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (2.11.3)
Requirement already satisfied: numpy>=1.15.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (1.21.5)
Requirement already satisfied: typer<0.5.0,>=0.3.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (0.4.2)
Requirement already satisfied: srsly<3.0.0,>=2.4.3 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (2.4.3)
2022-07-04 11:25:14.408177: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2022-07-04 11:25:14.408220: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not have a GPU set up on your machine.
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (1.0.2)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (1.0.7)
Requirement already satisfied: setuptools in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (61.2.0)
Requirement already satisfied: preshed<3.1.0,>=3.0.2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (3.0.6)
Requirement already satisfied: packaging>=20.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (21.3)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in c:\users\prash\anaconda\lib\site-packages (from packaging>=20.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (3.0.4)
Requirement already satisfied: smart-open<6.0.0,>=5.2.1 in c:\users\prash\anaconda\lib\site-packages (from pathy>=0.3.5->spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (5.2.1)
Requirement already satisfied: typing-extensions>=3.7.4.3 in c:\users\prash\anaconda\lib\site-packages (from pydantic!=1.8,!=1.8.1,<1.9.0,>=1.7.4->spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.
0) (4.1.1)
Requirement already satisfied: charset-normalizer~=2.0.0 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (2.0.4)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (1.26.9)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (2022.6.15)
Requirement already satisfied: idna<4,>=2.5 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (3.3)
Requirement already satisfied: colorama in c:\users\prash\anaconda\lib\site-packages (from tqdm<5.0.0,>=4.38.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (0.4.4)
Requirement already satisfied: click<9.0.0,>=7.1.1 in c:\users\prash\anaconda\lib\site-packages (from typer<0.5.0,>=0.3.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (8.0.4)
Requirement already satisfied: MarkupSafe>=0.23 in c:\users\prash\anaconda\lib\site-packages (from jinja2->spacy<3.4.0,>=3.3.0.dev0->en-core-web-lg==3.3.0) (2.1.1)
Installing collected packages: en-core-web-lg
Successfully installed en-core-web-lg-3.3.0
[+] Download and installation successful
You can now load the package via spacy.load('en_core_web_lg')
Collecting en-core-web-sm==3.3.0
  Downloading https://github.com/explosion/spacy-models/releases/download/en_core_web_sm-3.3.0/en_core_web_sm-3.3.0-py3-none-any.whl (12.8 MB)
Requirement already satisfied: spacy<3.4.0,>=3.3.0.dev0 in c:\users\prash\anaconda\lib\site-packages (from en-core-web-sm==3.3.0) (3.3.1)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (3.3.0)
Requirement already satisfied: preshed<3.1.0,>=3.0.2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (3.0.6)
Requirement already satisfied: packaging>=20.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (21.3)
Requirement already satisfied: requests<3.0.0,>=2.13.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (2.27.1)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (2.0.7)
Requirement already satisfied: srsly<3.0.0,>=2.4.3 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (2.4.3)
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.9 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (3.0.9)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (1.0.2)
Requirement already satisfied: thinc<8.1.0,>=8.0.14 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (8.0.17)
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (4.64.0)
Requirement already satisfied: blis<0.8.0,>=0.4.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (0.7.8)
Requirement already satisfied: numpy>=1.15.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (1.21.5)
Requirement already satisfied: jinja2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (2.11.3)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (1.0.7)
Requirement already satisfied: wasabi<1.1.0,>=0.9.1 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (0.9.1)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (2.0.6)
Requirement already satisfied: pydantic!=1.8,!=1.8.1,<1.9.0,>=1.7.4 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (1.8.2)
Requirement already satisfied: setuptools in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (61.2.0)
Requirement already satisfied: typer<0.5.0,>=0.3.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (0.4.2)
Requirement already satisfied: pathy>=0.3.5 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (0.6.2)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in c:\users\prash\anaconda\lib\site-packages (from packaging>=20.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (3.0.4)
Requirement already satisfied: smart-open<6.0.0,>=5.2.1 in c:\users\prash\anaconda\lib\site-packages (from pathy>=0.3.5->spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (5.2.1)
Requirement already satisfied: typing-extensions>=3.7.4.3 in c:\users\prash\anaconda\lib\site-packages (from pydantic!=1.8,!=1.8.1,<1.9.0,>=1.7.4->spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.
0) (4.1.1)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (1.26.9)
Requirement already satisfied: idna<4,>=2.5 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (3.3)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (2022.6.15)
Requirement already satisfied: charset-normalizer~=2.0.0 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (2.0.4)
Requirement already satisfied: colorama in c:\users\prash\anaconda\lib\site-packages (from tqdm<5.0.0,>=4.38.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (0.4.4)
Requirement already satisfied: click<9.0.0,>=7.1.1 in c:\users\prash\anaconda\lib\site-packages (from typer<0.5.0,>=0.3.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (8.0.4)
Requirement already satisfied: MarkupSafe>=0.23 in c:\users\prash\anaconda\lib\site-packages (from jinja2->spacy<3.4.0,>=3.3.0.dev0->en-core-web-sm==3.3.0) (2.1.1)
Installing collected packages: en-core-web-sm
Successfully installed en-core-web-sm-3.3.0
[+] Download and installation successful
You can now load the package via spacy.load('en_core_web_sm')
2022-07-04 11:26:32.113745: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2022-07-04 11:26:32.113794: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not have a GPU set up on your machine.
```

```
In [36]: !python -m spacy download en_core_web_md
```

```
Collecting en-core-web-md==3.3.0
  Downloading https://github.com/explosion/spacy-models/releases/download/en_core_web_md-3.3.0/en_core_web_md-3.3.0-py3-none-any.whl (33.5 MB)
Requirement already satisfied: spacy<3.4.0,>=3.3.0.dev0 in c:\users\prash\anaconda\lib\site-packages (from en-core-web-md==3.3.0) (3.3.1)
Requirement already satisfied: requests<3.0.0,>=2.13.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.27.1)
Requirement already satisfied: spacy-legacy<3.1.0,>=3.0.9 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (3.0.9)
Requirement already satisfied: cymem<2.1.0,>=2.0.2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.0.6)
Requirement already satisfied: pydantic!=1.8,!=1.8.1,<1.9.0,>=1.7.4 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (1.8.2)
Requirement already satisfied: spacy-loggers<2.0.0,>=1.0.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (1.0.2)
Requirement already satisfied: tqdm<5.0.0,>=4.38.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (4.64.0)
Requirement already satisfied: packaging>=20.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (21.3)
Requirement already satisfied: typer<0.5.0,>=0.3.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (0.4.2)
Requirement already satisfied: catalogue<2.1.0,>=2.0.6 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.0.7)
Requirement already satisfied: jinja2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.11.3)
Requirement already satisfied: thinc<8.1.0,>=8.0.14 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (8.0.17)
Requirement already satisfied: pathy>=0.3.5 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (0.6.2)
Requirement already satisfied: srsly<3.0.0,>=2.4.3 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.4.3)
Requirement already satisfied: langcodes<4.0.0,>=3.2.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (3.3.0)
Requirement already satisfied: setuptools in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (61.2.0)
Requirement already satisfied: murmurhash<1.1.0,>=0.28.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (1.0.7)
Requirement already satisfied: preshed<3.1.0,>=3.0.2 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (3.0.6)
Requirement already satisfied: wasabi<1.1.0,>=0.9.1 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (0.9.1)
Requirement already satisfied: numpy>=1.15.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (1.21.5)
Requirement already satisfied: blis<0.8.0,>=0.4.0 in c:\users\prash\anaconda\lib\site-packages (from spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (0.7.8)
Requirement already satisfied: pyparsing!=3.0.5,>=2.0.2 in c:\users\prash\anaconda\lib\site-packages (from packaging>=20.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (3.0.4)
Requirement already satisfied: smart-open<6.0.0,>=5.2.1 in c:\users\prash\anaconda\lib\site-packages (from pathy>=0.3.5->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (5.2.1)
Requirement already satisfied: typing-extensions>=3.7.4.3 in c:\users\prash\anaconda\lib\site-packages (from pydantic!=1.8,!=1.8.1,<1.9.0,>=1.7.4->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.
0) (4.1.1)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2022.6.15)
Requirement already satisfied: charset-normalizer~=2.0.0 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.0.4)
Requirement already satisfied: idna<4,>=2.5 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (3.3)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\prash\anaconda\lib\site-packages (from requests<3.0.0,>=2.13.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (1.26.9)
Requirement already satisfied: colorama in c:\users\prash\anaconda\lib\site-packages (from tqdm<5.0.0,>=4.38.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (0.4.4)
Requirement already satisfied: click<9.0.0,>=7.1.1 in c:\users\prash\anaconda\lib\site-packages (from typer<0.5.0,>=0.3.0->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (8.0.4)
Requirement already satisfied: MarkupSafe>=0.23 in c:\users\prash\anaconda\lib\site-packages (from jinja2->spacy<3.4.0,>=3.3.0.dev0->en-core-web-md==3.3.0) (2.1.1)
[+] Download and installation successful
You can now load the package via spacy.load('en_core_web_md')
2022-07-05 16:18:43.722479: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2022-07-05 16:18:43.722555: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not have a GPU set up on your machine.
```

```
In [37]: import numpy as np
         import pandas as pd
         import string
         import spacy
```

```
In [38]: from matplotlib.pyplot import imread
         from matplotlib import pyplot as plt
         from wordcloud import wordcloud
```

```
In [42]: import pandas
         book=pd.read_csv("E:\\downloads\\apple.txt",error_bad_lines=False)
```

```
C:\Users\prash\AppData\Local\Temp\ipykernel_2840\313411223.py:2: FutureWarning: The error_bad_lines argument has been deprecated and will be removed in a future version. Use on_bad_lines in the future.


  book=pd.read_csv("E:\\downloads\\apple.txt",error_bad_lines=False)
b'Skipping line 6: expected 1 fields, saw 14\n'
```

```
In [43]: "    furhufi.      ".strip()

Out[43]: 'furhufi.'
```

```
In [46]: book=[x.strip() for x in book]
         book=[x for x in book if x]
         book[0]

Out[46]: "It's amazing..... battery last around 10 -12 hrs.....best laptop for students and coders"
```

```
In [47]: nlp=spacy.load("en_core_web_sm")
```

```
In [50]: one_block=book[9]
         doc_block=nlp(one_block)
         spacy.displacy.render(doc_block,style='ent',jupyter=True)
```

Bought this product recently on 5 April DATE , was working perfectly fine for few days and on 16 April DATE the Mac working charge or turn on. Apple service centre says they can't fix the product under warranty and amazon in try to come up with a solution ever since , no solid answer . I m stuck with a dead mac ORG after using it for 10days. Request PERSON seller , Amazon ORG or apple to take full responsibility.

```
In [51]: spacy.load("en_core_web_sm")

Out[51]: <spacy.lang.en.English at 0x1bd5ce6d760>
```

```
In [53]: import spacy
         nlp=spacy.load("en_core_web_sm")
         doc=nlp(u"This is a sentence")
```

```
In [55]: doc_block

Out[55]: Bought this product recently on 5 April, was working perfectly fine for few days and on 16 April the Mac working charge or turn on. Apple service centre says they can't fix the product under war
         ranty and amazon in try to come up with a solution ever since , no solid answer . I m stuck with a dead mac after using it for 10days. Request seller , Amazon or apple to take full responsibilit
         y.
```

```
In [56]: doc_block=nlp(one_block)
         for token in doc_block[:]:
             print(token,token.pos_)
```

```
Bought VERB
this DET
product NOUN
recently ADV
on ADP
5 NUM
April PROPN
, PUNCT
was AUX
working VERB
perfectly ADV
fine ADJ
for ADP
few ADJ
days NOUN
and CCONJ
on ADP
16 NUM
April PROPN
the DET
Mac PROPN
working VERB
charge NOUN
or CCONJ
turn VERB
on ADP
. PUNCT
Apple PROPN
service NOUN
centre NOUN
says VERB
they PRON
ca AUX
n't PART
fix VERB
the DET
product NOUN
under ADP
warranty NOUN
and CCONJ
amazon NOUN
in ADP
try NOUN
to PART
come VERB
up ADP
with ADP
a DET
solution NOUN
ever ADV
since SCONJ
, PUNCT
no DET
solid ADJ
answer NOUN
. PUNCT
I PRON
m AUX
stuck VERB
with ADP
a DET
dead ADJ
mac NOUN
after ADP
using VERB
it PRON
for ADP
10days NUM
. PUNCT
Request NOUN
seller NOUN
, PUNCT
Amazon PROPN
or CCONJ
apple NOUN
to PART
take VERB
full ADJ
responsibility NOUN
. PUNCT
```

```
In [57]: nouns_verbs=[token.text for token in doc_block if token.pos_ in ('NOUN','VERB')]
         print(nouns_verbs[5:25])

['charge', 'turn', 'service', 'centre', 'says', 'fix', 'product', 'warranty', 'amazon', 'try', 'come', 'solution', 'answer', 'stuck', 'mac', 'using', 'Request', 'seller', 'apple', 'take']
```

```
In [58]: from sklearn.feature_extraction.text import CountVectorizer
```

```
In [61]: cv=CountVectorizer()
```

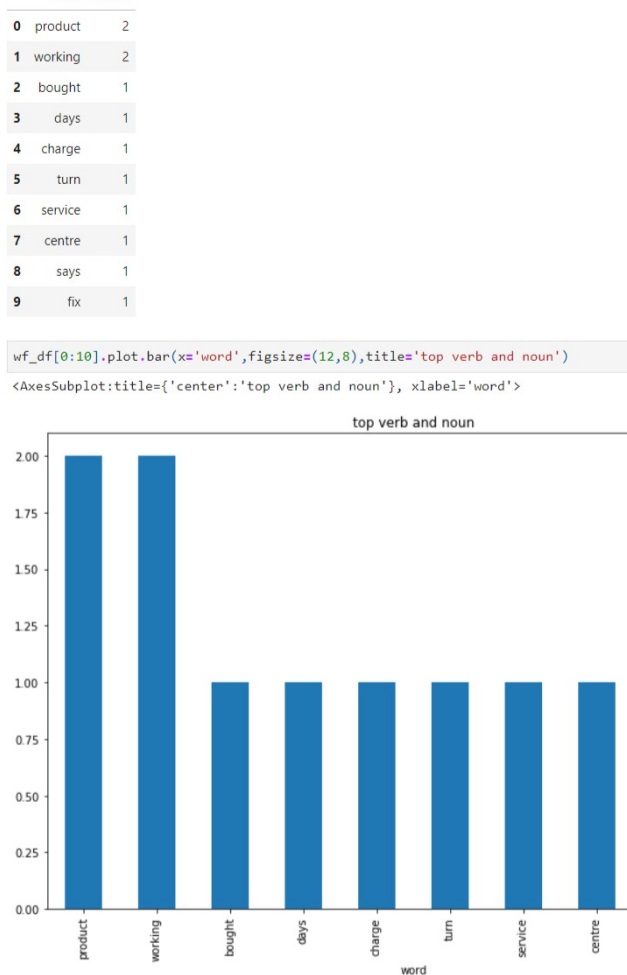
```
In [69]: X=cv.fit_transform(nouns_verbs)
         sum_words=X.sum(axis=0)
         words_freq=[(word,sum_words[0,idx]) for word,idx in cv.vocabulary_.items()]
         words_freq=sorted(words_freq,key=lambda x:x[1],reverse=True)
         wf_df=pd.DataFrame(words_freq)
         wf_df.columns=['word','count']
         wf_df[0:10]
```

Out[69]:

	word	count
0	product	2
1	working	2
2	bought	1
3	days	1
4	charge	1
5	turn	1
6	service	1
7	centre	1
8	says	1
9	fix	1

```
In [70]: wf_df[0:10].plot.bar(x='word',figsize=(12,8),title='top verb and noun')

Out[70]: <AxesSubplot:title={'center':'top verb and noun'}, xlabel='word'>
```



```
In [72]: affin=pd.read_csv("E:\\downloads\\Afinn.csv",sep=',',encoding='latin-1')
         affin.shape

Out[72]: (2477, 2)
```

```
In [73]: affin.head(10)
```

Out[73]:

	word	value
0	abandon	-2
1	abandoned	-2
2	abandons	-2
3	abducted	-2
4	abduction	-2
5	abductions	-2
6	abhor	-3
7	abhorred	-3
8	abhorrent	-3
9	abhors	-3

```
In [90]: book=pd.read_csv("E:\\downloads\\apple (1).txt",error_bad_lines=False)
         book=[x.strip() for x in book.x]
         book=[x for x in book if x]
```

```
C:\Users\prash\AppData\Local\Temp\ipykernel_2840\1541485809.py:1: FutureWarning: The error_bad_lines argument has been deprecated and will be removed in a future version. Use on_bad_lines in the future.


  book=pd.read_csv("E:\\downloads\\apple (1).txt",error_bad_lines=False)
b'Skipping line 6: expected 1 fields, saw 14\n'
```

```
In [79]: import nltk
         nltk.download('punkt')

[nltk_data] Downloading package punkt to
[nltk_data]     C:\Users\prash\AppData\Roaming\nltk_data...
[nltk_data]   Unzipping tokenizers\punkt.zip.

Out[79]: True
```

```
In [93]: from nltk import tokenize
         sentences=tokenize.sent_tokenize(" ".join(book))
         sentences[5:15]

Out[93]: ['), all printers are not compatible (e.g.',
          "the most economical MFD laser printer RICOH SP 111 can't be used), huge compatibility issues with Pages (MS Word) and Keynote (powerpoint) unless you master it by working on these (still mostl
         y the document and slides either do not open in windows environment or have distortion issues).",
          'you need to spend extra for an external CD writer and tp buy a carry bag.',
          'Mac con not be connected to most of the projectors unless you buy some connectors, which are expensive and theres no clarity which one to buy and from where.',
          "you can't connect it to your TV, the ports are different and again theres no clarity - customer support, manuals or help section are silent !",
          'Marketing strategy for Indian market, if at all has been planned, has been very bad.',
          'If these critical issues (and a few more not mentioned here) are handled properly, the Mac can sweep away other laptops in India.',
          "Presently, it doesn't seem to be happening.Overall Verdict.If compatibility issues mentioned above do not bother you, go for it.",
          'Else, think hard.',
          'If its an emotional issue to own a long cherished Mac, then its a different thing.']
```

```
In [92]: sent_df=pd.DataFrame(sentences,columns=['sentences'])
         sent_df
```

Out[92]:

	sentences
0	It's amazing..... battery last around 10 -12 h...
1	Got it in 50k in Diwali sale.
2	Technically good laptop.Good News.luxury produ...
3	Terrific sense of possession & pride.Bad News.
4	Problems will be there if you are switching fr...
...	...
182	You can get one of the best movie experiences ...
183	Overall I would it a 4.5/5.
184	I got a great deal on this laptop, which I hav...
185	I got it not only on discount but also was abl...
186	Laptop works really well, it was a good purchase!

187 rows × 1 columns

```
In [94]: affinity_scores=affin.set_index('word')['value'].to_dict()
```

```
In [95]: affinity_scores
```

```
Out[95]: {'abandon': -2,
 'abandoned': -2,
 'abandons': -2,
 'abducted': -2,
 'abduction': -2,
 'abductions': -2,
 'abhor': -3,
 'abhorred': -3,
 'abhorrent': -3,
 'abhors': -3,
 'abilities': 2,
 'ability': 2,
 'aboard': 1,
 'absentee': -1,
 'absentees': -1,
 'absolve': 2,
 'absolved': 2,
 'absolves': 2,
 'absolving': 2,
 'absorbed': 1,
 'abuse': -3,
 'abused': -3,
 'abuses': -3,
 'abusive': -3,
 'accept': 1,
 'accepted': 1,
 'accepting': 1,
 'accepts': 1,
 'accident': -2,
 'accidental': -2,
 'accidentally': -2,
 'accidents': -2,
 'accomplish': 2,
 'accomplished': 2,
 'accomplishes': 2,
 'accusation': -2,
 'accusations': -2,
 'accuse': -2,
 'accused': -2,
 'accuses': -2,
 'accusing': -2,
 'ache': -2,
 'achievable': 1,
 'aching': -2,
 'acquit': 2,
 'acquits': 2,
 'acquitted': 2,
 'acquitting': 2,
 'acrimonious': -3,
 'active': 1,
 'adequate': 1,
 'admire': 3,
 'admired': 3,
 'admires': 3,
 'admiring': 3,
 'admit': -1,
 'admits': -1,
 'admitted': -1,
 'admonish': -2,
 'admonished': -2,
 'adopt': 1,
 'adopts': 1,
 'adorable': 3,
 'adore': 3,
 'adored': 3,
 'adores': 3,
 'advanced': 1,
 'advantage': 2,
 'advantages': 2,
 'adventure': 2,
 'adventures': 2,
 'adventurous': 2,
 'affected': -1,
 'affection': 3,
 'affectionate': 3,
 'afflicted': -1,
 'affronted': -1,
 'afraid': -2,
 'aggravate': -2,
 'aggravated': -2,
 'aggravates': -2,
 'aggravating': -2,
 'aggression': -2,
 'aggressions': -2,
 'aggressive': -2,
 'aghast': -2,
 'agog': 2,
 'agonise': -3,
 'agonised': -3,
 'agonises': -3,
 'agonising': -3,
 'agonize': -3,
 'agonized': -3,
 'agonizes': -3,
 'agonizing': -3,
 'agree': 1,
 'agreeable': 2,
 'agreed': 1,
 'agreement': 1,
 'agrees': 1,
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```
In [105]: sentiment_lexicon=affinity_scores
          def calculate_sentiment(text: str =None):
              sent_score=0
              if text:
                  sentence=nlp(text)
                  for word in sentence:
                      sent_score+=sentiment_lexicon.get(word.lemma_,0)
              return sent_score
```

```
In [108]: calculate_sentiment(text='im feeling happy')

Out[108]: 3
```

```
In [110]: sent_df['sentiment_value']=sent_df['sentences'].apply(calculate_sentiment)
```

```
In [111]: sent_df
```

Out[111]:

	sentences	sentiment_value
0	It's amazing..... battery last around 10 -12 h...	7
1	Got it in 50k in Diwali sale.	0
2	Technically good laptop.Good News.luxury produ...	5
3	Terrific sense of possession & pride.Bad News.	1
4	Problems will be there if you are switching fr...	-11
...	...	...
182	You can get one of the best movie experiences ...	3
183	Overall I would it a 4.5/5.	0
184	I got a great deal on this laptop, which I hav...	3
185	I got it not only on discount but also was abl...	0
186	Laptop works really well, it was a good purchase!	3

187 rows × 2 columns

```
In [112]: sent_df['sentiment_value'].describe()

Out[112]: count    187.000000
          mean       0.898396
          std        3.368952
          min      -11.000000
          25%       -0.500000
          50%        0.000000
          75%        3.000000
          max       24.000000
          Name: sentiment_value, dtype: float64
```

```
In [115]: sent_df[sent_df['sentiment_value']<=0].head()
```

Out[115]:

	sentences	sentiment_value
1	Got it in 50k in Diwali sale.	0
4	Problems will be there if you are switching fr...	-11
5	), all printers are not compatible (e.g.	0
7	you need to spend extra for an external CD wri...	0
10	Marketing strategy for Indian market, if at al...	-3

```
In [116]: sent_df[sent_df['sentiment_value']>=20].head()
```

Out[116]:

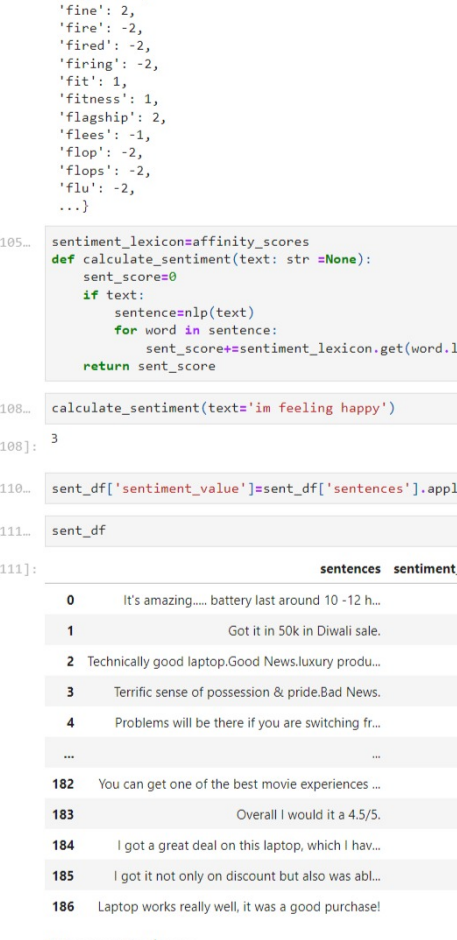
	sentences	sentiment_value
86	All are Gud.. For now.. Apple,apple,apple, tha...	24

```
In [117]: sent_df['index']=range(0,len(sent_df))
```

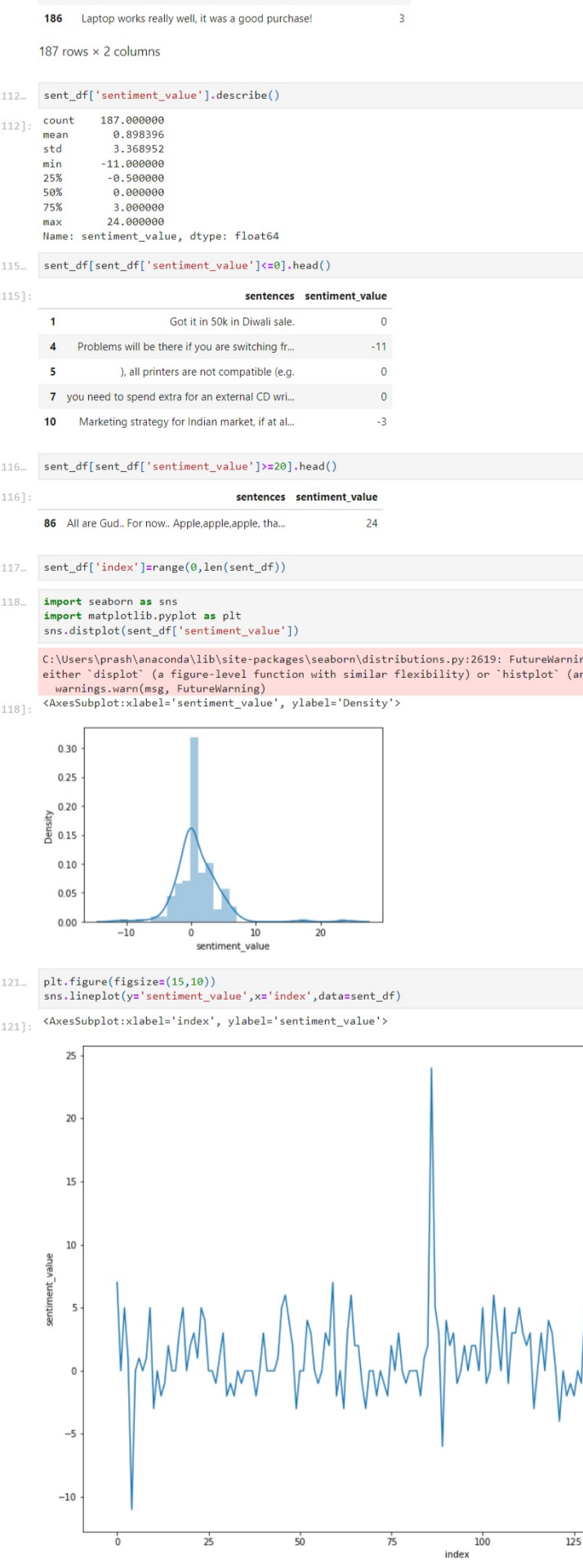
```
In [118]: import seaborn as sns
          import matplotlib.pyplot as plt
          sns.distplot(sent_df['sentiment_value'])
```

```
C:\Users\prash\anaconda\lib\site-packages\seaborn\distributions.py:2619: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
  warnings.warn(msg, FutureWarning)
```

```
Out[118]: <AxesSubplot:xlabel='sentiment_value', ylabel='Density'>
```


0.30
0.25
0.20
0.15
0.10
0.05
0.00
Density
−10
0
10
20
sentiment_value

```
In [121]: plt.figure(figsize=(15,10))
          sns.lineplot(y='sentiment_value',x='index',data=sent_df)

Out[121]: <AxesSubplot:xlabel='index', ylabel='sentiment_value'>
```