

# autoeda

January 2, 2024

```
[ ]: # Load the Data
import pandas as pd

df = pd.read_csv(r"education.csv")
df
```

```
[ ]:      datasrno  workex  gmat
0           1      21    720
1           2     107    640
2           3      57    740
3           4      99    690
4           5     208    710
..          ...     ...     ...
768         769      88    620
769         770     132    670
770         771      28    610
771         772      10    610
772         773      52    620
```

[773 rows x 3 columns]

```
[ ]: # Auto EDA
# -----
# Sweetviz
# Autoviz
# Dtale
# Pandas Profiling
# Dataprep
```

```
[ ]: !pip install sweetviz
```

Collecting sweetviz

Downloading sweetviz-2.1.4-py3-none-any.whl (15.1 MB)

15.1/15.1 MB

29.3 MB/s eta 0:00:00

Requirement already satisfied: pandas!=1.0.0,!=1.0.1,!=1.0.2,>=0.25.3 in /usr/local/lib/python3.10/dist-packages (from sweetviz) (1.5.3)

Requirement already satisfied: numpy>=1.16.0 in /usr/local/lib/python3.10/dist-

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packages (from sweetviz) (1.23.5)
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Requirement already satisfied: tqdm>=4.43.0 in /usr/local/lib/python3.10/dist-
packages (from sweetviz) (4.66.1)
Requirement already satisfied: scipy>=1.3.2 in /usr/local/lib/python3.10/dist-
packages (from sweetviz) (1.10.1)
Requirement already satisfied: jinja2>=2.11.1 in /usr/local/lib/python3.10/dist-
packages (from sweetviz) (3.1.2)
Requirement already satisfied: importlib-resources>=1.2.0 in
/usr/local/lib/python3.10/dist-packages (from sweetviz) (6.0.1)
Requirement already satisfied: MarkupSafe>=2.0 in
/usr/local/lib/python3.10/dist-packages (from jinja2>=2.11.1->sweetviz) (2.1.3)
Requirement already satisfied: contourpy>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib>=3.1.3->sweetviz)
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Requirement already satisfied: fonttools>=4.22.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib>=3.1.3->sweetviz)
(4.42.0)
Requirement already satisfied: kiwisolver>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib>=3.1.3->sweetviz)
(1.4.4)
Requirement already satisfied: packaging>=20.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib>=3.1.3->sweetviz)
(23.1)
Requirement already satisfied: pillow>=6.2.0 in /usr/local/lib/python3.10/dist-
packages (from matplotlib>=3.1.3->sweetviz) (9.4.0)
Requirement already satisfied: pyparsing>=2.3.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib>=3.1.3->sweetviz)
(3.1.1)
Requirement already satisfied: python-dateutil>=2.7 in
/usr/local/lib/python3.10/dist-packages (from matplotlib>=3.1.3->sweetviz)
(2.8.2)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-
packages (from pandas!=1.0.0,!=1.0.1,!=1.0.2,>=0.25.3->sweetviz) (2023.3)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist-
packages (from python-dateutil>=2.7->matplotlib>=3.1.3->sweetviz) (1.16.0)
Installing collected packages: sweetviz
Successfully installed sweetviz-2.1.4

```

```

[ ]: # Sweetviz
      #####
      #pip install sweetviz
      import sweetviz as sv

```

```
s = sv.analyze(df)
s.show_notebook()
```

```
/usr/local/lib/python3.10/dist-packages/sweetviz/dataframe_report.py:74:
FutureWarning: iteritems is deprecated and will be removed in a future version.
Use .items instead.
```

```
    all_source_names = [cur_name for cur_name, cur_series in
source_df.iteritems()]
```

```
/usr/local/lib/python3.10/dist-packages/sweetviz/dataframe_report.py:109:
FutureWarning: iteritems is deprecated and will be removed in a future version.
Use .items instead.
```

```
    filtered_series_names_in_source = [cur_name for cur_name, cur_series in
source_df.iteritems()]
```

```
| [ 0%] 00:00 -> (?
left)
```

```
/usr/local/lib/python3.10/dist-packages/sweetviz/series_analyzer_numeric.py:25:
FutureWarning: The 'mad' method is deprecated and will be removed in a future
version. To compute the same result, you may do `(df - df.mean()).abs().mean()`.
stats["mad"] = series.mad()
```

```
/usr/local/lib/python3.10/dist-packages/sweetviz/series_analyzer_numeric.py:25:
FutureWarning: The 'mad' method is deprecated and will be removed in a future
version. To compute the same result, you may do `(df - df.mean()).abs().mean()`.
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```
/usr/local/lib/python3.10/dist-packages/sweetviz/series_analyzer_numeric.py:25:
FutureWarning: The 'mad' method is deprecated and will be removed in a future
version. To compute the same result, you may do `(df - df.mean()).abs().mean()`.
stats["mad"] = series.mad()
```

```
<IPython.core.display.HTML object>
```

```
[ ]: pip install autoviz
```

```
Collecting autoviz
```

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  Downloading autoviz-0.1.730-py3-none-any.whl (67 kB)
        67.0/67.0 kB
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Collecting bokeh~=2.4.2 (from autoviz)
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Collecting emoji (from autoviz)
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Requirement already satisfied: fsspec>=0.8.3 in
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Collecting holoviews~=1.14.9 (from autoviz)
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Collecting hvplot~=0.7.3 (from autoviz)
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Requirement already satisfied: ipython in /usr/local/lib/python3.10/dist-packages (from autoviz) (7.34.0)
Collecting jupyter (from autoviz)
  Downloading jupyter-1.0.0-py2.py3-none-any.whl (2.7 kB)
Requirement already satisfied: matplotlib>=3.3.3 in /usr/local/lib/python3.10/dist-packages (from autoviz) (3.7.1)
Requirement already satisfied: nltk in /usr/local/lib/python3.10/dist-packages (from autoviz) (3.8.1)
Requirement already satisfied: numpy in /usr/local/lib/python3.10/dist-packages (from autoviz) (1.23.5)
Requirement already satisfied: pandas in /usr/local/lib/python3.10/dist-packages (from autoviz) (1.5.3)
Collecting pandas-dq==1.28 (from autoviz)
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Requirement already satisfied: panel>=0.12.6 in /usr/local/lib/python3.10/dist-packages (from autoviz) (1.2.1)
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pyamg-5.0.1-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.9 MB)
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Requirement already satisfied: scikit-learn in /usr/local/lib/python3.10/dist-packages (from autoviz) (1.2.2)
Requirement already satisfied: seaborn>=0.11.1 in /usr/local/lib/python3.10/dist-packages (from autoviz) (0.12.2)
Requirement already satisfied: statsmodels in /usr/local/lib/python3.10/dist-packages (from autoviz) (0.14.0)
Requirement already satisfied: textblob in /usr/local/lib/python3.10/dist-packages (from autoviz) (0.17.1)
Requirement already satisfied: typing-extensions>=4.1.1 in /usr/local/lib/python3.10/dist-packages (from autoviz) (4.7.1)
Requirement already satisfied: wordcloud in /usr/local/lib/python3.10/dist-packages (from autoviz) (1.9.2)
Requirement already satisfied: xgboost>=0.82 in /usr/local/lib/python3.10/dist-packages (from autoviz) (1.7.6)
Requirement already satisfied: xlrd in /usr/local/lib/python3.10/dist-packages (from autoviz) (2.0.1)
Requirement already satisfied: Jinja2>=2.9 in /usr/local/lib/python3.10/dist-packages (from bokeh~=2.4.2->autoviz) (3.1.2)
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Requirement already satisfied: pillow>=7.1.0 in /usr/local/lib/python3.10/dist-packages (from bokeh~=2.4.2->autoviz) (9.4.0)

Requirement already satisfied: PyYAML>=3.10 in /usr/local/lib/python3.10/dist-packages (from bokeh~=2.4.2->autoviz) (6.0.1)

Requirement already satisfied: tornado>=5.1 in /usr/local/lib/python3.10/dist-packages (from bokeh~=2.4.2->autoviz) (6.3.2)

Requirement already satisfied: param<2.0,>=1.9.3 in /usr/local/lib/python3.10/dist-packages (from holoviews~=1.14.9->autoviz) (1.13.0)

Requirement already satisfied: pyviz-comms>=0.7.4 in /usr/local/lib/python3.10/dist-packages (from holoviews~=1.14.9->autoviz) (3.0.0)

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Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=3.3.3->autoviz) (1.1.0)

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Requirement already satisfied: kiwisolver>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=3.3.3->autoviz) (1.4.4)

Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib>=3.3.3->autoviz) (3.1.1)

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Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-packages (from pandas->autoviz) (2023.3)

INFO: pip is looking at multiple versions of panel to determine which version is compatible with other requirements. This could take a while.

Collecting panel>=0.12.6 (from autoviz)

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INFO: pip is looking at multiple versions of panel to determine which
version is compatible with other requirements. This could take a while.
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Requirement already satisfied: decorator in
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Requirement already satisfied: traitlets>=4.2 in /usr/local/lib/python3.10/dist-
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Requirement already satisfied: prompt-toolkit!=3.0.0,!3.0.1,<3.1.0,>=2.0.0 in
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Requirement already satisfied: pygments in /usr/local/lib/python3.10/dist-

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 Requirement already satisfied: notebook in /usr/local/lib/python3.10/dist-packages (from jupyter->autoviz) (6.5.5)  
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 Requirement already satisfied: jupyter-console in /usr/local/lib/python3.10/dist-packages (from jupyter->autoviz) (6.1.0)  
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 Requirement already satisfied: regex>=2021.8.3 in /usr/local/lib/python3.10/dist-packages (from nltk->autoviz) (2023.6.3)  
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 Requirement already satisfied: parso<0.9.0,>=0.8.3 in /usr/local/lib/python3.10/dist-packages (from jedi>=0.16->ipython->autoviz) (0.8.3)  
 Requirement already satisfied: MarkupSafe>=2.0 in /usr/local/lib/python3.10/dist-packages (from Jinja2>=2.9->bokeh~2.4.2->autoviz) (2.1.3)  
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 Requirement already satisfied: wcwidth in /usr/local/lib/python3.10/dist-packages (from prompt-toolkit!=3.0.0,!3.0.1,<3.1.0,>=2.0.0->ipython->autoviz) (0.2.6)  
 Requirement already satisfied: webencodings in /usr/local/lib/python3.10/dist-packages (from bleach->panel>=0.12.6->autoviz) (0.5.1)  
 Requirement already satisfied: ipython-genutils in /usr/local/lib/python3.10/dist-packages (from ipykernel->jupyter->autoviz) (0.2.0)  
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packages (from ipykernel->jupyter->autoviz) (6.1.12)

Requirement already satisfied: widgetsnbextension~=3.6.0 in /usr/local/lib/python3.10/dist-packages (from ipywidgets->jupyter->autoviz) (3.6.5)

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Requirement already satisfied: lxml in /usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->autoviz) (4.9.3)

Requirement already satisfied: beautifulsoup4 in /usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->autoviz) (4.11.2)

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Requirement already satisfied: entrypoints>=0.2.2 in /usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->autoviz) (0.4)

Requirement already satisfied: jupyter-core>=4.7 in /usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->autoviz) (5.3.1)

Requirement already satisfied: jupyterlab-pygments in /usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->autoviz) (0.2.2)

Requirement already satisfied: mistune<2,>=0.8.1 in /usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->autoviz) (0.8.4)

Requirement already satisfied: nbclient>=0.5.0 in /usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->autoviz) (0.8.0)

Requirement already satisfied: nbformat>=5.1 in /usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->autoviz) (5.9.2)

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Requirement already satisfied: pyzmq<25,>=17 in /usr/local/lib/python3.10/dist-packages (from notebook->jupyter->autoviz) (23.2.1)

Requirement already satisfied: argon2-cffi in /usr/local/lib/python3.10/dist-packages (from notebook->jupyter->autoviz) (23.1.0)

Requirement already satisfied: nest-asyncio>=1.5 in /usr/local/lib/python3.10/dist-packages (from notebook->jupyter->autoviz) (1.5.7)

Requirement already satisfied: Send2Trash>=1.8.0 in /usr/local/lib/python3.10/dist-packages (from notebook->jupyter->autoviz) (1.8.2)

Requirement already satisfied: terminado>=0.8.3 in /usr/local/lib/python3.10/dist-packages (from notebook->jupyter->autoviz) (0.17.1)

Requirement already satisfied: prometheus-client in



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/usr/local/lib/python3.10/dist-packages (from notebook->jupyter->autoviz)
(0.17.1)
Requirement already satisfied: nbclassic>=0.4.7 in
/usr/local/lib/python3.10/dist-packages (from notebook->jupyter->autoviz)
(1.0.0)
Collecting qtpy>=2.0.1 (from qtconsole->jupyter->autoviz)
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Requirement already satisfied: charset-normalizer<4,>=2 in
/usr/local/lib/python3.10/dist-packages (from requests->panel>=0.12.6->autoviz)
(3.2.0)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-
packages (from requests->panel>=0.12.6->autoviz) (3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in
/usr/local/lib/python3.10/dist-packages (from requests->panel>=0.12.6->autoviz)
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Requirement already satisfied: certifi>=2017.4.17 in
/usr/local/lib/python3.10/dist-packages (from requests->panel>=0.12.6->autoviz)
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Requirement already satisfied: platformdirs>=2.5 in
/usr/local/lib/python3.10/dist-packages (from jupyter-
core>=4.7->nbconvert->jupyter->autoviz) (3.10.0)
Requirement already satisfied: jupyter-server>=1.8 in
/usr/local/lib/python3.10/dist-packages (from
nbclassic>=0.4.7->notebook->jupyter->autoviz) (1.24.0)
Requirement already satisfied: notebook-shim>=0.2.3 in
/usr/local/lib/python3.10/dist-packages (from
nbclassic>=0.4.7->notebook->jupyter->autoviz) (0.2.3)
Requirement already satisfied: fastjsonschema in /usr/local/lib/python3.10/dist-
packages (from nbformat>=5.1->nbconvert->jupyter->autoviz) (2.18.0)
Requirement already satisfied: jsonschema>=2.6 in
/usr/local/lib/python3.10/dist-packages (from
nbformat>=5.1->nbconvert->jupyter->autoviz) (4.19.0)
Requirement already satisfied: argon2-cffi-bindings in
/usr/local/lib/python3.10/dist-packages (from
argon2-cffi->notebook->jupyter->autoviz) (21.2.0)
Requirement already satisfied: soupsieve>1.2 in /usr/local/lib/python3.10/dist-
packages (from beautifulsoup4->nbconvert->jupyter->autoviz) (2.4.1)
Requirement already satisfied: attrs>=22.2.0 in /usr/local/lib/python3.10/dist-
packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert->jupyter->autoviz)
(23.1.0)
Requirement already satisfied: jsonschema-specifications>=2023.03.6 in
/usr/local/lib/python3.10/dist-packages (from
jsonschema>=2.6->nbformat>=5.1->nbconvert->jupyter->autoviz) (2023.7.1)
Requirement already satisfied: referencing>=0.28.4 in
/usr/local/lib/python3.10/dist-packages (from
jsonschema>=2.6->nbformat>=5.1->nbconvert->jupyter->autoviz) (0.30.2)

```

Requirement already satisfied: rpds-py>=0.7.1 in /usr/local/lib/python3.10/dist-packages (from jsonschema>=2.6->nbformat>=5.1->nbconvert->jupyter->autoviz) (0.9.2)

Requirement already satisfied: anyio<4,>=3.1.0 in /usr/local/lib/python3.10/dist-packages (from jupyter-server>=1.8->nbclassic>=0.4.7->notebook->jupyter->autoviz) (3.7.1)

Requirement already satisfied: websocket-client in /usr/local/lib/python3.10/dist-packages (from jupyter-server>=1.8->nbclassic>=0.4.7->notebook->jupyter->autoviz) (1.6.1)

Requirement already satisfied: cffi>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from argon2-cffi-bindings->argon2-cffi->notebook->jupyter->autoviz) (1.15.1)

Requirement already satisfied: sniffio>=1.1 in /usr/local/lib/python3.10/dist-packages (from anyio<4,>=3.1.0->jupyter-server>=1.8->nbclassic>=0.4.7->notebook->jupyter->autoviz) (1.3.0)

Requirement already satisfied: exceptiongroup in /usr/local/lib/python3.10/dist-packages (from anyio<4,>=3.1.0->jupyter-server>=1.8->nbclassic>=0.4.7->notebook->jupyter->autoviz) (1.1.3)

Requirement already satisfied: pycparser in /usr/local/lib/python3.10/dist-packages (from cffi>=1.0.1->argon2-cffi-bindings->argon2-cffi->notebook->jupyter->autoviz) (2.21)

Installing collected packages: qtpy, jedi, emoji, pyamg, bokeh, panel, pandas-dq, qtconsole, holoviews, hvplot, jupyter, autoviz

Attempting uninstall: bokeh

Found existing installation: bokeh 3.2.2

Uninstalling bokeh-3.2.2:

Successfully uninstalled bokeh-3.2.2

Attempting uninstall: panel

Found existing installation: panel 1.2.1

Uninstalling panel-1.2.1:

Successfully uninstalled panel-1.2.1

Attempting uninstall: holoviews

Found existing installation: holoviews 1.17.1

Uninstalling holoviews-1.17.1:

Successfully uninstalled holoviews-1.17.1

Successfully installed autoviz-0.1.730 bokeh-2.4.3 emoji-2.8.0 holoviews-1.14.9 hvplot-0.7.3 jedi-0.19.0 jupyter-1.0.0 pandas-dq-1.28 panel-0.14.4 pyamg-5.0.1 qtconsole-5.4.3 qtpy-2.3.1

```
[ ]: # Autoviz
#####
# pip install autoviz
from autoviz.AutoViz_Class import AutoViz_Class

av = AutoViz_Class()
%matplotlib inline
# a = av.AutoViz(r"education.csv", chart_format = 'html')
```

```
a = av.AutoViz(r"education.csv")
```

Imported v0.1.730. After importing autoviz, execute '%matplotlib inline' to display charts inline.

```
AV = AutoViz_Class()
dfte = AV.AutoViz(filename, sep=',', depVar='', dfte=None, header=0,
verbose=1, lowess=False,
                    chart_format='svg',max_rows_analyzed=150000,max_cols_analyzed=30,
save_plot_dir=None)
```

Shape of your Data Set loaded: (773, 3)

```
#####
#####
```

```
##### C L A S S I F Y I N G   V A R I A B L E S
```

```
#####
```

```
#####
#####
```

Classifying variables in data set...

3 Predictors classified...

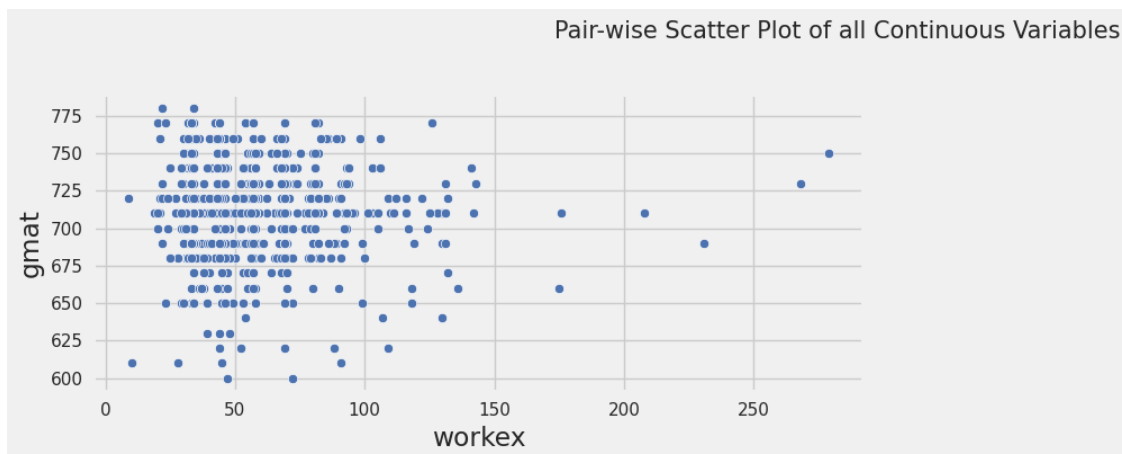
1 variable(s) removed since they were ID or low-information variables

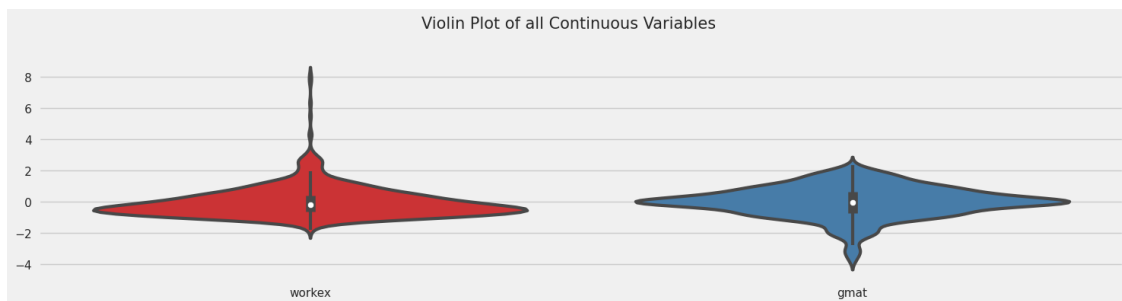
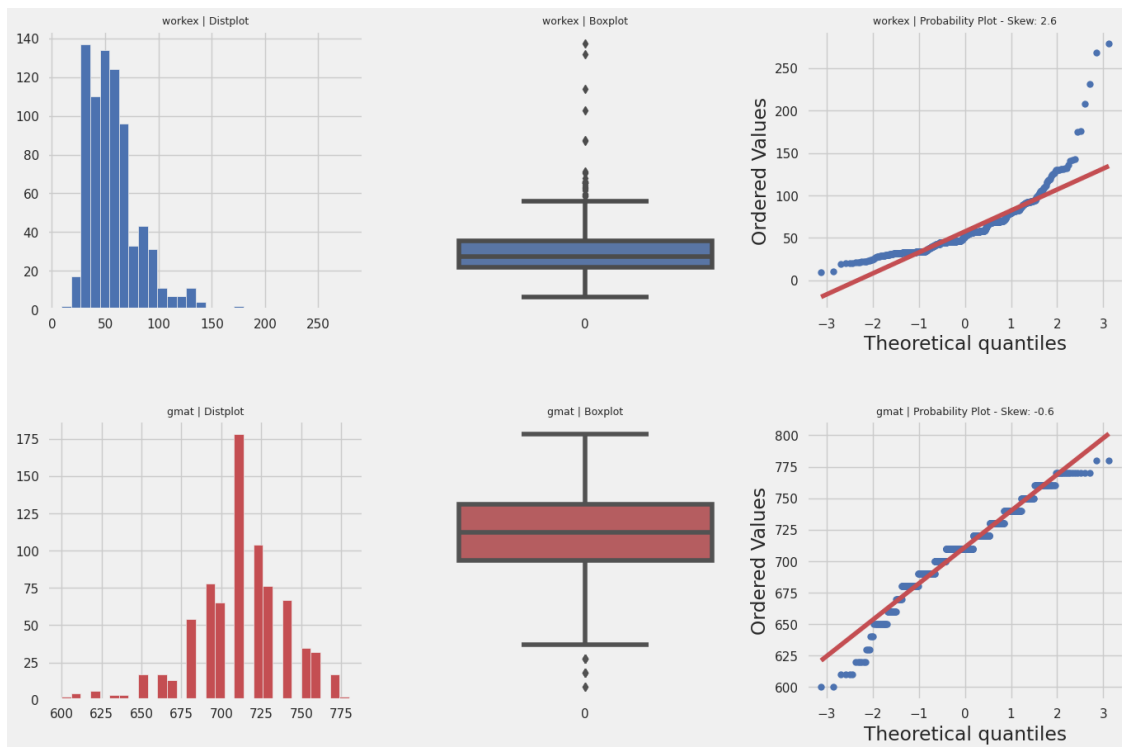
List of variables removed: ['datasrno']

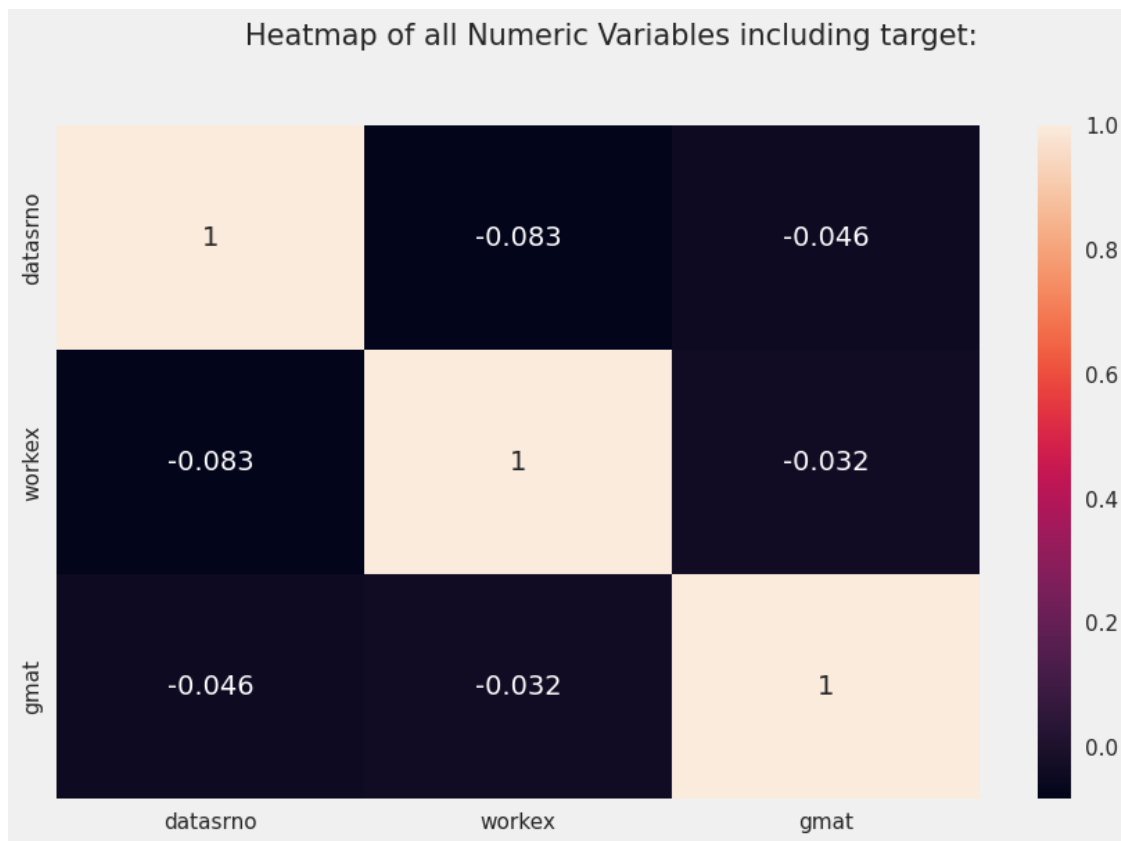
To fix data quality issues automatically, import FixDQ from autoviz...

<pandas.io.formats.style.Styler at 0x7a341de9be50>

Number of All Scatter Plots = 3







All Plots done

Time to run AutoViz = 9 seconds

##### AUTO VISUALIZATION Completed #####

```
[ ]: import os
      os.getcwd()

      # If the dependent variable is known:
      a = av.AutoViz(r"education.csv", depVar = 'gmat') # depVar - target variable in
      ↳ your dataset
      %matplotlib inline
```

Shape of your Data Set loaded: (773, 3)

#####

##### CLASSIFYING VARIABLES

#####

#####

#####

Classifying variables in data set...

2 Predictors classified...

1 variable(s) removed since they were ID or low-information variables

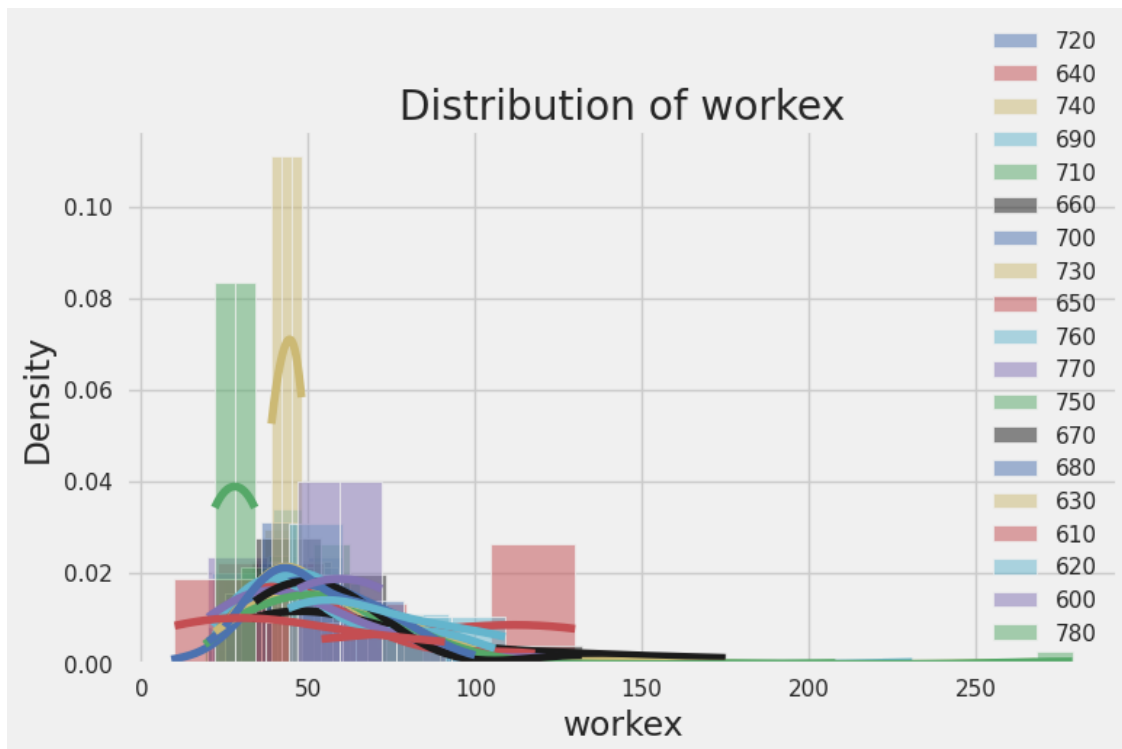
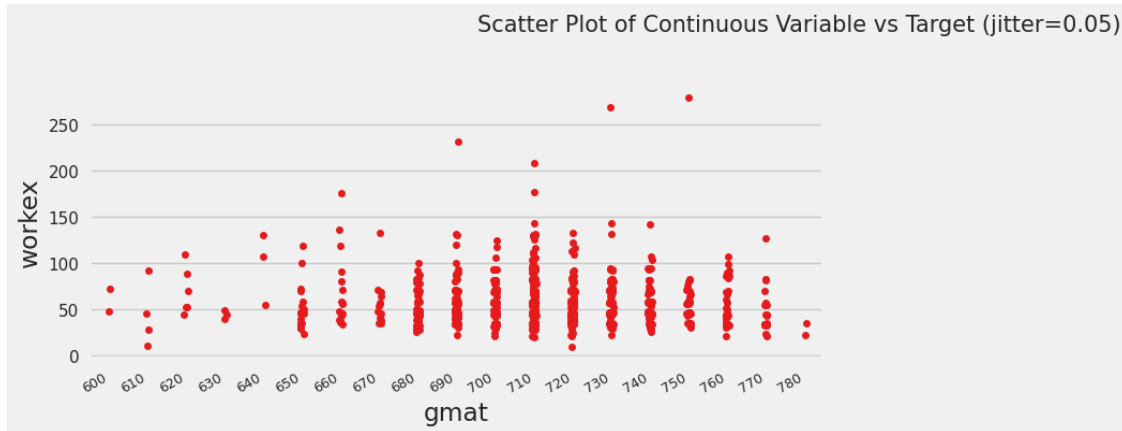
List of variables removed: ['datasrno']

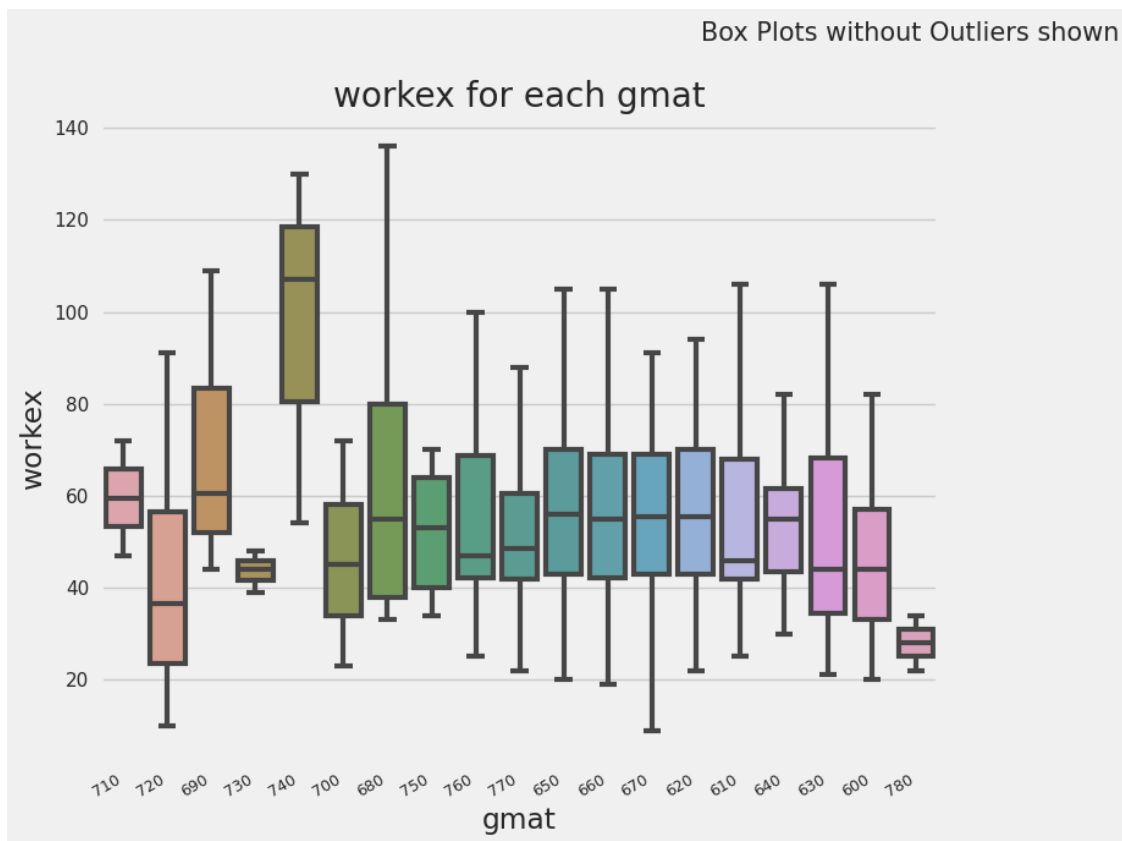
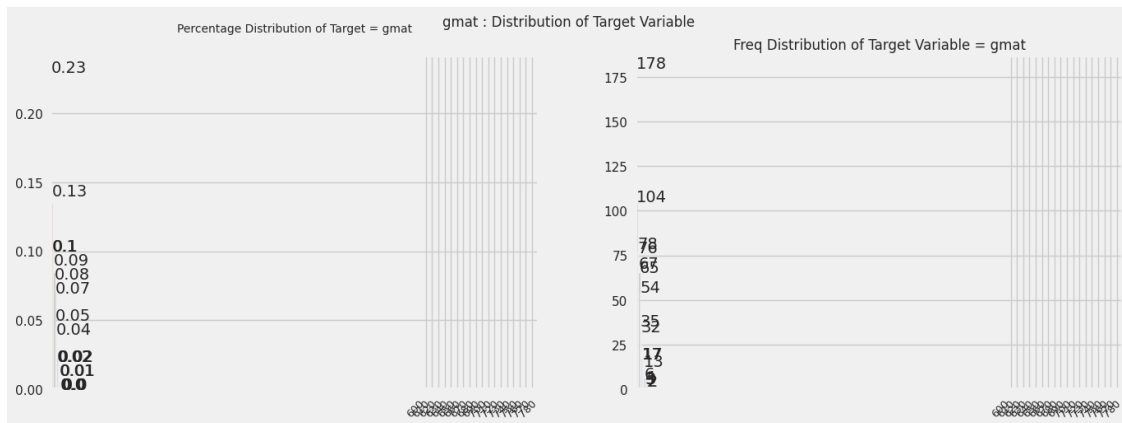
##### Multi-Classification problem #####

To fix data quality issues automatically, import FixDQ from autoviz...

Alert: Dropping 369 duplicate rows can sometimes cause column data types to change to object. Double-check!

<pandas.io.formats.style.Styler at 0x7a3439d61960>





All Plots done

Time to run AutoViz = 4 seconds

##### AUTO VISUALIZATION Completed #####

```
[ ]: # D-Tale
#####

!pip install dtale # In case of any error then please install werkzeug
↳ appropriate version (pip install werkzeug==2.0.3)
```

```
Collecting dtale
  Downloading dtale-3.3.0-py2.py3-none-any.whl (14.2 MB)
    14.2/14.2 MB
27.6 MB/s eta 0:00:00
Collecting dash-colorscales (from dtale)
  Downloading dash_colorscales-0.0.4.tar.gz (62 kB)
    62.3/62.3 kB
7.0 MB/s eta 0:00:00
  Preparing metadata (setup.py) ... done
Collecting dash-daq (from dtale)
  Downloading dash_daq-0.5.0.tar.gz (642 kB)
    642.7/642.7 kB
36.7 MB/s eta 0:00:00
  Preparing metadata (setup.py) ... done
Collecting Flask-Compress (from dtale)
  Downloading Flask_Compress-1.13-py3-none-any.whl (7.9 kB)
Requirement already satisfied: future>=0.14.0 in /usr/local/lib/python3.10/dist-packages (from dtale) (0.18.3)
Collecting kaleido (from dtale)
  Downloading kaleido-0.2.1-py2.py3-none-manylinux1_x86_64.whl (79.9 MB)
    79.9/79.9 MB
9.1 MB/s eta 0:00:00
Requirement already satisfied: missingno in /usr/local/lib/python3.10/dist-packages (from dtale) (0.5.2)
Requirement already satisfied: pandas in /usr/local/lib/python3.10/dist-packages (from dtale) (1.5.3)
Collecting squarify (from dtale)
  Downloading squarify-0.4.3-py3-none-any.whl (4.3 kB)
Collecting strsimpy (from dtale)
  Downloading strsimpy-0.2.1-py3-none-any.whl (45 kB)
    45.9/45.9 kB
5.9 MB/s eta 0:00:00
Requirement already satisfied: six in /usr/local/lib/python3.10/dist-packages (from dtale) (1.16.0)
Requirement already satisfied: xlrd in /usr/local/lib/python3.10/dist-packages (from dtale) (2.0.1)
Requirement already satisfied: beautifulsoup4 in /usr/local/lib/python3.10/dist-packages (from dtale) (4.11.2)
Requirement already satisfied: certifi in /usr/local/lib/python3.10/dist-packages (from dtale) (2023.7.22)
Requirement already satisfied: cyclor in /usr/local/lib/python3.10/dist-packages
```



```

(from dtale) (0.11.0)
Collecting flask-ngrok (from dtale)
  Downloading flask_ngrok-0.0.25-py3-none-any.whl (3.1 kB)
Collecting lz4 (from dtale)
  Downloading
lz4-4.3.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.3 MB)
      1.3/1.3 MB
71.6 MB/s eta 0:00:00
Collecting dash-bootstrap-components<=1.3.1 (from dtale)
  Downloading dash_bootstrap_components-1.3.1-py3-none-any.whl (219 kB)
      219.7/219.7 kB
24.1 MB/s eta 0:00:00
Requirement already satisfied: seaborn in /usr/local/lib/python3.10/dist-
packages (from dtale) (0.12.2)
Requirement already satisfied: networkx in /usr/local/lib/python3.10/dist-
packages (from dtale) (3.1)
Requirement already satisfied: scikit-learn in /usr/local/lib/python3.10/dist-
packages (from dtale) (1.2.2)
Requirement already satisfied: statsmodels in /usr/local/lib/python3.10/dist-
packages (from dtale) (0.14.0)
Requirement already satisfied: numpy in /usr/local/lib/python3.10/dist-packages
(from dtale) (1.23.5)
Requirement already satisfied: openpyxl!=3.2.0b1 in
/usr/local/lib/python3.10/dist-packages (from dtale) (3.1.2)
Requirement already satisfied: xarray in /usr/local/lib/python3.10/dist-packages
(from dtale) (2023.7.0)
Collecting dash (from dtale)
  Downloading dash-2.12.1-py3-none-any.whl (10.4 MB)
      10.4/10.4 MB
87.7 MB/s eta 0:00:00
Requirement already satisfied: et-xmlfile in
/usr/local/lib/python3.10/dist-packages (from dtale) (1.1.0)
Requirement already satisfied: plotly in /usr/local/lib/python3.10/dist-packages
(from dtale) (5.15.0)
Requirement already satisfied: Flask<2.3 in /usr/local/lib/python3.10/dist-
packages (from dtale) (2.2.5)
Requirement already satisfied: itsdangerous in /usr/local/lib/python3.10/dist-
packages (from dtale) (2.1.2)
Requirement already satisfied: requests in /usr/local/lib/python3.10/dist-
packages (from dtale) (2.31.0)
Collecting werkzeug<2.3 (from dtale)
  Downloading Werkzeug-2.2.3-py3-none-any.whl (233 kB)
      233.6/233.6 kB
25.5 MB/s eta 0:00:00
Requirement already satisfied: matplotlib in
/usr/local/lib/python3.10/dist-packages (from dtale) (3.7.1)
Requirement already satisfied: scipy in /usr/local/lib/python3.10/dist-packages
(from dtale) (1.10.1)

```

```

Collecting dash-html-components==2.0.0 (from dash->dtale)
  Downloading dash_html_components-2.0.0-py3-none-any.whl (4.1 kB)
Collecting dash-core-components==2.0.0 (from dash->dtale)
  Downloading dash_core_components-2.0.0-py3-none-any.whl (3.8 kB)
Collecting dash-table==5.0.0 (from dash->dtale)
  Downloading dash_table-5.0.0-py3-none-any.whl (3.9 kB)
Requirement already satisfied: typing-extensions>=4.1.1 in
/usr/local/lib/python3.10/dist-packages (from dash->dtale) (4.7.1)
Collecting retrying (from dash->dtale)
  Downloading retrying-1.3.4-py3-none-any.whl (11 kB)
Collecting ansi2html (from dash->dtale)
  Downloading ansi2html-1.8.0-py3-none-any.whl (16 kB)
Requirement already satisfied: nest-asyncio in /usr/local/lib/python3.10/dist-
packages (from dash->dtale) (1.5.7)
Requirement already satisfied: setuptools in /usr/local/lib/python3.10/dist-
packages (from dash->dtale) (67.7.2)
Requirement already satisfied: Jinja2>=3.0 in /usr/local/lib/python3.10/dist-
packages (from Flask<2.3->dtale) (3.1.2)
Requirement already satisfied: click>=8.0 in /usr/local/lib/python3.10/dist-
packages (from Flask<2.3->dtale) (8.1.7)
Requirement already satisfied: tenacity>=6.2.0 in
/usr/local/lib/python3.10/dist-packages (from plotly->dtale) (8.2.3)
Requirement already satisfied: packaging in /usr/local/lib/python3.10/dist-
packages (from plotly->dtale) (23.1)
Requirement already satisfied: MarkupSafe>=2.1.1 in
/usr/local/lib/python3.10/dist-packages (from werkzeug<2.3->dtale) (2.1.3)
Requirement already satisfied: soupsieve>1.2 in /usr/local/lib/python3.10/dist-
packages (from beautifulsoup4->dtale) (2.4.1)
Collecting brotli (from Flask-Compress->dtale)
  Downloading Brotli-1.0.9-cp310-cp310-manylinux_2_5_x86_64.manylinux1_x86_64.ma
nylinux_2_12_x86_64.manylinux2010_x86_64.whl (2.7 MB)

```

2.7/2.7 MB

88.1 MB/s eta 0:00:00

```

Requirement already satisfied: contourpy>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->dtale) (1.1.0)
Requirement already satisfied: fonttools>=4.22.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->dtale) (4.42.0)
Requirement already satisfied: kiwisolver>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->dtale) (1.4.4)
Requirement already satisfied: pillow>=6.2.0 in /usr/local/lib/python3.10/dist-
packages (from matplotlib->dtale) (9.4.0)
Requirement already satisfied: pyparsing>=2.3.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->dtale) (3.1.1)
Requirement already satisfied: python-dateutil>=2.7 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->dtale) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-
packages (from pandas->dtale) (2023.3)
Requirement already satisfied: charset-normalizer<4,>=2 in

```

```

/usr/local/lib/python3.10/dist-packages (from requests->dtale) (3.2.0)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-
packages (from requests->dtale) (3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in
/usr/local/lib/python3.10/dist-packages (from requests->dtale) (2.0.4)
Requirement already satisfied: joblib>=1.1.1 in /usr/local/lib/python3.10/dist-
packages (from scikit-learn->dtale) (1.3.2)
Requirement already satisfied: threadpoolctl>=2.0.0 in
/usr/local/lib/python3.10/dist-packages (from scikit-learn->dtale) (3.2.0)
Requirement already satisfied: patsy>=0.5.2 in /usr/local/lib/python3.10/dist-
packages (from statsmodels->dtale) (0.5.3)
Building wheels for collected packages: dash-colorscales, dash-daq
  Building wheel for dash-colorscales (setup.py) ... done
  Created wheel for dash-colorscales: filename=dash_colorscales-0.0.4-py3-none-
any.whl size=62566
sha256=cddc9bdb8e8808293ad49036882e4b6a0dd4b0682581e2f7dc2b9b5e78d53b6d1
  Stored in directory: /root/.cache/pip/wheels/70/6a/1f/95b2135cd2c895f0cd8b5d6d
6ae7d5ed0a883580b34a31a14d
  Building wheel for dash-daq (setup.py) ... done
  Created wheel for dash-daq: filename=dash_daq-0.5.0-py3-none-any.whl
size=669691
sha256=c56685c71eb09d69d2e722f664aca82a9085520d5fa796e408187dfea15aa183
  Stored in directory: /root/.cache/pip/wheels/75/14/1b/208d09d5e239391048bdc167
759977b41ba65a3d4063aebf6b
Successfully built dash-colorscales dash-daq
Installing collected packages: strsimpy, squarify, kaleido, dash-table, dash-
html-components, dash-core-components, dash-colorscales, brotli, werkzeug,
retrying, lz4, ansi2html, flask-ngrok, Flask-Compress, dash, dash-daq, dash-
bootstrap-components, dtale
  Attempting uninstall: werkzeug
    Found existing installation: Werkzeug 2.3.7
    Uninstalling Werkzeug-2.3.7:
      Successfully uninstalled Werkzeug-2.3.7
Successfully installed Flask-Compress-1.13 ansi2html-1.8.0 brotli-1.0.9
dash-2.12.1 dash-bootstrap-components-1.3.1 dash-colorscales-0.0.4 dash-core-
components-2.0.0 dash-daq-0.5.0 dash-html-components-2.0.0 dash-table-5.0.0
dtale-3.3.0 flask-ngrok-0.0.25 kaleido-0.2.1 lz4-4.3.2 retrying-1.3.4
squarify-0.4.3 strsimpy-0.2.1 werkzeug-2.2.3

```

```

[ ]: import dtale
import dtale.app as dtale_app
df = pd.read_csv(r"education.csv")
dtale_app.USE_COLAB = True
d = dtale.show(df, notebook=True)
# d.open_browser()

```

<IPython.lib.display.IFrame at 0x7a34139a7a60>

```
[ ]: # Pandas Profiling
#####
```

```
!pip install pandas_profiling
```

Collecting pandas\_profiling

Downloading pandas\_profiling-3.6.6-py2.py3-none-any.whl (324 kB)

324.4/324.4

kB 4.3 MB/s eta 0:00:00

Collecting ydata-profiling (from pandas\_profiling)

Downloading ydata\_profiling-4.5.1-py2.py3-none-any.whl (357 kB)

357.3/357.3 kB

10.5 MB/s eta 0:00:00

Requirement already satisfied: scipy<1.12,>=1.4.1 in

/usr/local/lib/python3.10/dist-packages (from ydata-profiling->pandas\_profiling) (1.10.1)

Requirement already satisfied: pandas!=1.4.0,<2.1,>1.1 in

/usr/local/lib/python3.10/dist-packages (from ydata-profiling->pandas\_profiling) (1.5.3)

Requirement already satisfied: matplotlib<4,>=3.2 in

/usr/local/lib/python3.10/dist-packages (from ydata-profiling->pandas\_profiling) (3.7.1)

Collecting pydantic<2,>=1.8.1 (from ydata-profiling->pandas\_profiling)

Downloading

pydantic-1.10.12-cp310-cp310-manylinux\_2\_17\_x86\_64.manylinux2014\_x86\_64.whl (3.1 MB)

3.1/3.1 MB

18.3 MB/s eta 0:00:00

Requirement already satisfied: PyYAML<6.1,>=5.0.0 in

/usr/local/lib/python3.10/dist-packages (from ydata-profiling->pandas\_profiling) (6.0.1)

Requirement already satisfied: jinja2<3.2,>=2.11.1 in

/usr/local/lib/python3.10/dist-packages (from ydata-profiling->pandas\_profiling) (3.1.2)

Collecting visions[type\_image\_path]==0.7.5 (from ydata-profiling->pandas\_profiling)

Downloading visions-0.7.5-py3-none-any.whl (102 kB)

102.7/102.7 kB

11.6 MB/s eta 0:00:00

Requirement already satisfied: numpy<1.24,>=1.16.0 in

/usr/local/lib/python3.10/dist-packages (from ydata-profiling->pandas\_profiling) (1.23.5)

Collecting htmlmin==0.1.12 (from ydata-profiling->pandas\_profiling)

Downloading htmlmin-0.1.12.tar.gz (19 kB)

Preparing metadata (setup.py) ... done

Collecting phik<0.13,>=0.11.1 (from ydata-profiling->pandas\_profiling)

Downloading

phik-0.12.3-cp310-cp310-manylinux\_2\_17\_x86\_64.manylinux2014\_x86\_64.whl (679 kB)  
679.5/679.5 kB

22.7 MB/s eta 0:00:00

Requirement already satisfied: requests<3,>=2.24.0 in  
/usr/local/lib/python3.10/dist-packages (from ydata-profiling->pandas\_profiling)  
(2.31.0)

Requirement already satisfied: tqdm<5,>=4.48.2 in  
/usr/local/lib/python3.10/dist-packages (from ydata-profiling->pandas\_profiling)  
(4.66.1)

Requirement already satisfied: seaborn<0.13,>=0.10.1 in  
/usr/local/lib/python3.10/dist-packages (from ydata-profiling->pandas\_profiling)  
(0.12.2)

Collecting multimethod<2,>=1.4 (from ydata-profiling->pandas\_profiling)

Downloading multimethod-1.9.1-py3-none-any.whl (10 kB)

Requirement already satisfied: statsmodels<1,>=0.13.2 in  
/usr/local/lib/python3.10/dist-packages (from ydata-profiling->pandas\_profiling)  
(0.14.0)

Collecting typeguard<3,>=2.13.2 (from ydata-profiling->pandas\_profiling)

Downloading typeguard-2.13.3-py3-none-any.whl (17 kB)

Collecting imagehash==4.3.1 (from ydata-profiling->pandas\_profiling)

Downloading ImageHash-4.3.1-py2.py3-none-any.whl (296 kB)

296.5/296.5 kB

17.6 MB/s eta 0:00:00

Requirement already satisfied: wordcloud>=1.9.1 in  
/usr/local/lib/python3.10/dist-packages (from ydata-profiling->pandas\_profiling)  
(1.9.2)

Collecting dacite>=1.8 (from ydata-profiling->pandas\_profiling)

Downloading dacite-1.8.1-py3-none-any.whl (14 kB)

Requirement already satisfied: PyWavelets in /usr/local/lib/python3.10/dist-  
packages (from imagehash==4.3.1->ydata-profiling->pandas\_profiling) (1.4.1)

Requirement already satisfied: pillow in /usr/local/lib/python3.10/dist-packages  
(from imagehash==4.3.1->ydata-profiling->pandas\_profiling) (9.4.0)

Requirement already satisfied: attrs>=19.3.0 in /usr/local/lib/python3.10/dist-  
packages (from visions[type\_image\_path]==0.7.5->ydata-  
profiling->pandas\_profiling) (23.1.0)

Requirement already satisfied: networkx>=2.4 in /usr/local/lib/python3.10/dist-  
packages (from visions[type\_image\_path]==0.7.5->ydata-  
profiling->pandas\_profiling) (3.1)

Collecting tangled-up-in-unicode>=0.0.4 (from  
visions[type\_image\_path]==0.7.5->ydata-profiling->pandas\_profiling)

Downloading tangled\_up\_in\_unicode-0.2.0-py3-none-any.whl (4.7 MB)

4.7/4.7 MB

38.9 MB/s eta 0:00:00

Requirement already satisfied: MarkupSafe>=2.0 in  
/usr/local/lib/python3.10/dist-packages (from jinja2<3.2,>=2.11.1->ydata-  
profiling->pandas\_profiling) (2.1.3)

Requirement already satisfied: contourpy>=1.0.1 in  
/usr/local/lib/python3.10/dist-packages (from matplotlib<4,>=3.2->ydata-

```

profiling->pandas_profiling) (1.1.0)
Requirement already satisfied: cyclerg>=0.10 in /usr/local/lib/python3.10/dist-
packages (from matplotlib<4,>=3.2->ydata-profiling->pandas_profiling) (0.11.0)
Requirement already satisfied: fonttools>=4.22.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib<4,>=3.2->ydata-
profiling->pandas_profiling) (4.42.0)
Requirement already satisfied: kiwisolver>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib<4,>=3.2->ydata-
profiling->pandas_profiling) (1.4.4)
Requirement already satisfied: packaging>=20.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib<4,>=3.2->ydata-
profiling->pandas_profiling) (23.1)
Requirement already satisfied: pyparsing>=2.3.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib<4,>=3.2->ydata-
profiling->pandas_profiling) (3.1.1)
Requirement already satisfied: python-dateutil>=2.7 in
/usr/local/lib/python3.10/dist-packages (from matplotlib<4,>=3.2->ydata-
profiling->pandas_profiling) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-
packages (from pandas!=1.4.0,<2.1,>1.1->ydata-profiling->pandas_profiling)
(2023.3)
Requirement already satisfied: joblib>=0.14.1 in /usr/local/lib/python3.10/dist-
packages (from phik<0.13,>=0.11.1->ydata-profiling->pandas_profiling) (1.3.2)
Requirement already satisfied: typing-extensions>=4.2.0 in
/usr/local/lib/python3.10/dist-packages (from pydantic<2,>=1.8.1->ydata-
profiling->pandas_profiling) (4.7.1)
Requirement already satisfied: charset-normalizer<4,>=2 in
/usr/local/lib/python3.10/dist-packages (from requests<3,>=2.24.0->ydata-
profiling->pandas_profiling) (3.2.0)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-
packages (from requests<3,>=2.24.0->ydata-profiling->pandas_profiling) (3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in
/usr/local/lib/python3.10/dist-packages (from requests<3,>=2.24.0->ydata-
profiling->pandas_profiling) (2.0.4)
Requirement already satisfied: certifi>=2017.4.17 in
/usr/local/lib/python3.10/dist-packages (from requests<3,>=2.24.0->ydata-
profiling->pandas_profiling) (2023.7.22)
Requirement already satisfied: patsy>=0.5.2 in /usr/local/lib/python3.10/dist-
packages (from statsmodels<1,>=0.13.2->ydata-profiling->pandas_profiling)
(0.5.3)
Requirement already satisfied: six in /usr/local/lib/python3.10/dist-packages
(from patsy>=0.5.2->statsmodels<1,>=0.13.2->ydata-profiling->pandas_profiling)
(1.16.0)
Building wheels for collected packages: htmlmin
  Building wheel for htmlmin (setup.py) ... done
  Created wheel for htmlmin: filename=htmlmin-0.1.12-py3-none-any.whl size=27082
sha256=149c8928847f1a145e09d9e14166e516bfefc3dbfbbe6292dbefba532ed9e845
  Stored in directory: /root/.cache/pip/wheels/dd/91/29/a79cecb328d01739e64017b6

```

```
fb9a1ab9d8cb1853098ec5966d
Successfully built htmlmin
Installing collected packages: htmlmin, typeguard, tangled-up-in-unicode,
pydantic, multimethod, dacite, imagehash, visions, phik, ydata-profiling,
pandas_profiling
  Attempting uninstall: pydantic
    Found existing installation: pydantic 2.2.0
    Uninstalling pydantic-2.2.0:
      Successfully uninstalled pydantic-2.2.0
Successfully installed dacite-1.8.1 htmlmin-0.1.12 imagehash-4.3.1
multimethod-1.9.1 pandas_profiling-3.6.6 phik-0.12.3 pydantic-1.10.12 tangled-
up-in-unicode-0.2.0 typeguard-2.13.3 visions-0.7.5 ydata-profiling-4.5.1
```

```
[ ]: from pandas_profiling import ProfileReport
```

```
p = ProfileReport(df)
p
```

```
2023-08-25 07:14:58,130 - INFO      - Pandas backend loaded 1.5.3
2023-08-25 07:14:58,143 - INFO      - Numpy backend loaded 1.23.5
2023-08-25 07:14:58,146 - INFO      - Pyspark backend NOT loaded
2023-08-25 07:14:58,149 - INFO      - Python backend loaded
```

```
Summarize dataset:  0%|          | 0/5 [00:00<?, ?it/s]
```

```
Generate report structure:  0%|          | 0/1 [00:00<?, ?it/s]
```

```
Render HTML:  0%|          | 0/1 [00:00<?, ?it/s]
```

```
<IPython.core.display.HTML object>
```

```
[ ]:
```

```
[ ]: # Dataprep
      #####
```

```
!pip install dataprep
```

```
Collecting dataprep
```

```
  Downloading dataprep-0.4.5-py3-none-any.whl (9.9 MB)
```

```
      9.9/9.9 MB
```

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19.0 MB/s eta 0:00:00
```

```
Requirement already satisfied: aiohttp<4.0,>=3.6 in
```

```
/usr/local/lib/python3.10/dist-packages (from dataprep) (3.8.5)
```

```
Requirement already satisfied: bokeh<3,>=2 in /usr/local/lib/python3.10/dist-
packages (from dataprep) (2.4.3)
```

```
Requirement already satisfied: dask[array,dataframe,delayed]>=2022.3.0 in
/usr/local/lib/python3.10/dist-packages (from dataprep) (2023.8.0)
```

```
Requirement already satisfied: flask<3,>=2 in /usr/local/lib/python3.10/dist-
packages (from dataprep) (2.2.5)
```

```

Collecting flask_cors<4.0.0,>=3.0.10 (from dataprep)
  Downloading Flask_Cors-3.0.10-py2.py3-none-any.whl (14 kB)
Requirement already satisfied: ipywidgets<8.0,>=7.5 in
/usr/local/lib/python3.10/dist-packages (from dataprep) (7.7.1)
Collecting jinja2<3.1,>=3.0 (from dataprep)
  Downloading Jinja2-3.0.3-py3-none-any.whl (133 kB)
133.6/133.6 kB
11.6 MB/s eta 0:00:00
Collecting jsonpath-ng<2.0,>=1.5 (from dataprep)
  Downloading jsonpath_ng-1.5.3-py3-none-any.whl (29 kB)
Collecting metaphone<0.7,>=0.6 (from dataprep)
  Downloading Metaphone-0.6.tar.gz (14 kB)
  Preparing metadata (setup.py) ... done
Requirement already satisfied: nltk<4.0.0,>=3.6.7 in
/usr/local/lib/python3.10/dist-packages (from dataprep) (3.8.1)
Requirement already satisfied: numpy<2.0,>=1.21 in
/usr/local/lib/python3.10/dist-packages (from dataprep) (1.23.5)
Requirement already satisfied: pandas<2.0,>=1.1 in
/usr/local/lib/python3.10/dist-packages (from dataprep) (1.5.3)
Requirement already satisfied: pydantic<2.0,>=1.6 in
/usr/local/lib/python3.10/dist-packages (from dataprep) (1.10.12)
Requirement already satisfied: pydot<2.0.0,>=1.4.2 in
/usr/local/lib/python3.10/dist-packages (from dataprep) (1.4.2)
Collecting python-crfsuite==0.9.8 (from dataprep)
  Downloading
python_crfsuite-0.9.8-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl
(1.0 MB)
1.0/1.0 MB
27.5 MB/s eta 0:00:00
Collecting python-stdnum<2.0,>=1.16 (from dataprep)
  Downloading python_stdnum-1.19-py2.py3-none-any.whl (1.0 MB)
1.0/1.0 MB
40.7 MB/s eta 0:00:00
Collecting rapidfuzz<3.0.0,>=2.1.2 (from dataprep)
  Downloading
rapidfuzz-2.15.1-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (3.0
MB)
3.0/3.0 MB
30.4 MB/s eta 0:00:00
Collecting regex<2022.0.0,>=2021.8.3 (from dataprep)
  Downloading
regex-2021.11.10-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (764
kB)
764.0/764.0 kB
31.0 MB/s eta 0:00:00
Requirement already satisfied: scipy<2.0,>=1.8 in
/usr/local/lib/python3.10/dist-packages (from dataprep) (1.10.1)
Collecting sqlalchemy==1.3.24 (from dataprep)

```



```

Downloading SQLAlchemy-1.3.24.tar.gz (6.4 MB)
6.4/6.4 MB
55.4 MB/s eta 0:00:00
Preparing metadata (setup.py) ... done
Requirement already satisfied: tqdm<5.0,>=4.48 in
/usr/local/lib/python3.10/dist-packages (from dataprep) (4.66.1)
Collecting varname<0.9.0,>=0.8.1 (from dataprep)
  Downloading varname-0.8.3-py3-none-any.whl (21 kB)
Requirement already satisfied: wordcloud<2.0,>=1.8 in
/usr/local/lib/python3.10/dist-packages (from dataprep) (1.9.2)
Requirement already satisfied: attrs>=17.3.0 in /usr/local/lib/python3.10/dist-
packages (from aiohttp<4.0,>=3.6->dataprep) (23.1.0)
Requirement already satisfied: charset-normalizer<4.0,>=2.0 in
/usr/local/lib/python3.10/dist-packages (from aiohttp<4.0,>=3.6->dataprep)
(3.2.0)
Requirement already satisfied: multidict<7.0,>=4.5 in
/usr/local/lib/python3.10/dist-packages (from aiohttp<4.0,>=3.6->dataprep)
(6.0.4)
Requirement already satisfied: async-timeout<5.0,>=4.0.0a3 in
/usr/local/lib/python3.10/dist-packages (from aiohttp<4.0,>=3.6->dataprep)
(4.0.3)
Requirement already satisfied: yarl<2.0,>=1.0 in /usr/local/lib/python3.10/dist-
packages (from aiohttp<4.0,>=3.6->dataprep) (1.9.2)
Requirement already satisfied: frozenlist>=1.1.1 in
/usr/local/lib/python3.10/dist-packages (from aiohttp<4.0,>=3.6->dataprep)
(1.4.0)
Requirement already satisfied: aiosignal>=1.1.2 in
/usr/local/lib/python3.10/dist-packages (from aiohttp<4.0,>=3.6->dataprep)
(1.3.1)
Requirement already satisfied: packaging>=16.8 in
/usr/local/lib/python3.10/dist-packages (from bokeh<3,>=2->dataprep) (23.1)
Requirement already satisfied: pillow>=7.1.0 in /usr/local/lib/python3.10/dist-
packages (from bokeh<3,>=2->dataprep) (9.4.0)
Requirement already satisfied: PyYAML>=3.10 in /usr/local/lib/python3.10/dist-
packages (from bokeh<3,>=2->dataprep) (6.0.1)
Requirement already satisfied: tornado>=5.1 in /usr/local/lib/python3.10/dist-
packages (from bokeh<3,>=2->dataprep) (6.3.2)
Requirement already satisfied: typing-extensions>=3.10.0 in
/usr/local/lib/python3.10/dist-packages (from bokeh<3,>=2->dataprep) (4.7.1)
Requirement already satisfied: click>=8.0 in /usr/local/lib/python3.10/dist-
packages (from dask[array,dataframe,delayer]>=2022.3.0->dataprep) (8.1.7)
Requirement already satisfied: cloudpickle>=1.5.0 in
/usr/local/lib/python3.10/dist-packages (from
dask[array,dataframe,delayer]>=2022.3.0->dataprep) (2.2.1)
Requirement already satisfied: fsspec>=2021.09.0 in
/usr/local/lib/python3.10/dist-packages (from
dask[array,dataframe,delayer]>=2022.3.0->dataprep) (2023.6.0)
Requirement already satisfied: partd>=1.2.0 in /usr/local/lib/python3.10/dist-

```

packages (from dask[array,dataframe,delayer]>=2022.3.0->dataprep) (1.4.0)  
 Requirement already satisfied: toolz>=0.10.0 in /usr/local/lib/python3.10/dist-  
 packages (from dask[array,dataframe,delayer]>=2022.3.0->dataprep) (0.12.0)  
 Requirement already satisfied: importlib-metadata>=4.13.0 in  
 /usr/local/lib/python3.10/dist-packages (from  
 dask[array,dataframe,delayer]>=2022.3.0->dataprep) (6.8.0)  
 Requirement already satisfied: Werkzeug>=2.2.2 in  
 /usr/local/lib/python3.10/dist-packages (from flask<3,>=2->dataprep) (2.2.3)  
 Requirement already satisfied: itsdangerous>=2.0 in  
 /usr/local/lib/python3.10/dist-packages (from flask<3,>=2->dataprep) (2.1.2)  
 Requirement already satisfied: Six in /usr/local/lib/python3.10/dist-packages  
 (from flask\_cors<4.0.0,>=3.0.10->dataprep) (1.16.0)  
 Requirement already satisfied: ipykernel>=4.5.1 in  
 /usr/local/lib/python3.10/dist-packages (from ipywidgets<8.0,>=7.5->dataprep)  
 (5.5.6)  
 Requirement already satisfied: ipython-genutils~0.2.0 in  
 /usr/local/lib/python3.10/dist-packages (from ipywidgets<8.0,>=7.5->dataprep)  
 (0.2.0)  
 Requirement already satisfied: traitlets>=4.3.1 in  
 /usr/local/lib/python3.10/dist-packages (from ipywidgets<8.0,>=7.5->dataprep)  
 (5.7.1)  
 Requirement already satisfied: widgetsnbextension~3.6.0 in  
 /usr/local/lib/python3.10/dist-packages (from ipywidgets<8.0,>=7.5->dataprep)  
 (3.6.5)  
 Requirement already satisfied: ipython>=4.0.0 in /usr/local/lib/python3.10/dist-  
 packages (from ipywidgets<8.0,>=7.5->dataprep) (7.34.0)  
 Requirement already satisfied: jupyterlab-widgets>=1.0.0 in  
 /usr/local/lib/python3.10/dist-packages (from ipywidgets<8.0,>=7.5->dataprep)  
 (3.0.8)  
 Requirement already satisfied: MarkupSafe>=2.0 in  
 /usr/local/lib/python3.10/dist-packages (from jinja2<3.1,>=3.0->dataprep)  
 (2.1.3)  
 Collecting ply (from jsonpath-ng<2.0,>=1.5->dataprep)  
   Downloading ply-3.11-py2.py3-none-any.whl (49 kB)  
   49.6/49.6 kB  
 5.4 MB/s eta 0:00:00  
 Requirement already satisfied: decorator in  
 /usr/local/lib/python3.10/dist-packages (from jsonpath-ng<2.0,>=1.5->dataprep)  
 (4.4.2)  
 Requirement already satisfied: joblib in /usr/local/lib/python3.10/dist-packages  
 (from nltk<4.0.0,>=3.6.7->dataprep) (1.3.2)  
 Requirement already satisfied: python-dateutil>=2.8.1 in  
 /usr/local/lib/python3.10/dist-packages (from pandas<2.0,>=1.1->dataprep)  
 (2.8.2)  
 Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-  
 packages (from pandas<2.0,>=1.1->dataprep) (2023.3)  
 Requirement already satisfied: pyparsing>=2.1.4 in  
 /usr/local/lib/python3.10/dist-packages (from pydot<2.0.0,>=1.4.2->dataprep)

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(3.1.1)
Collecting asttokens<3.0.0,>=2.0.0 (from varname<0.9.0,>=0.8.1->dataprep)
  Downloading asttokens-2.2.1-py2.py3-none-any.whl (26 kB)
Collecting executing<0.9.0,>=0.8.3 (from varname<0.9.0,>=0.8.1->dataprep)
  Downloading executing-0.8.3-py2.py3-none-any.whl (16 kB)
Collecting pure_eval<1.0.0 (from varname<0.9.0,>=0.8.1->dataprep)
  Downloading pure_eval-0.2.2-py3-none-any.whl (11 kB)
Requirement already satisfied: matplotlib in /usr/local/lib/python3.10/dist-
packages (from wordcloud<2.0,>=1.8->dataprep) (3.7.1)
Requirement already satisfied: zipp>=0.5 in /usr/local/lib/python3.10/dist-
packages (from importlib-
metadata>=4.13.0->dask[array,dataframe,delayed]>=2022.3.0->dataprep) (3.16.2)
Requirement already satisfied: jupyter-client in /usr/local/lib/python3.10/dist-
packages (from ipykernel>=4.5.1->ipywidgets<8.0,>=7.5->dataprep) (6.1.12)
Requirement already satisfied: setuptools>=18.5 in
/usr/local/lib/python3.10/dist-packages (from
ipython>=4.0.0->ipywidgets<8.0,>=7.5->dataprep) (67.7.2)
Requirement already satisfied: jedi>=0.16 in /usr/local/lib/python3.10/dist-
packages (from ipython>=4.0.0->ipywidgets<8.0,>=7.5->dataprep) (0.19.0)
Requirement already satisfied: pickleshare in /usr/local/lib/python3.10/dist-
packages (from ipython>=4.0.0->ipywidgets<8.0,>=7.5->dataprep) (0.7.5)
Requirement already satisfied: prompt-toolkit!=3.0.0,!3.0.1,<3.1.0,>=2.0.0 in
/usr/local/lib/python3.10/dist-packages (from
ipython>=4.0.0->ipywidgets<8.0,>=7.5->dataprep) (3.0.39)
Requirement already satisfied: pygments in /usr/local/lib/python3.10/dist-
packages (from ipython>=4.0.0->ipywidgets<8.0,>=7.5->dataprep) (2.16.1)
Requirement already satisfied: backcall in /usr/local/lib/python3.10/dist-
packages (from ipython>=4.0.0->ipywidgets<8.0,>=7.5->dataprep) (0.2.0)
Requirement already satisfied: matplotlib-inline in
/usr/local/lib/python3.10/dist-packages (from
ipython>=4.0.0->ipywidgets<8.0,>=7.5->dataprep) (0.1.6)
Requirement already satisfied: pexpect>4.3 in /usr/local/lib/python3.10/dist-
packages (from ipython>=4.0.0->ipywidgets<8.0,>=7.5->dataprep) (4.8.0)
Requirement already satisfied: locket in /usr/local/lib/python3.10/dist-packages
(from partd>=1.2.0->dask[array,dataframe,delayed]>=2022.3.0->dataprep) (1.0.0)
Requirement already satisfied: notebook>=4.4.1 in
/usr/local/lib/python3.10/dist-packages (from
widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (6.5.5)
Requirement already satisfied: idna>=2.0 in /usr/local/lib/python3.10/dist-
packages (from yarl<2.0,>=1.0->aiohttp<4.0,>=3.6->dataprep) (3.4)
Requirement already satisfied: contourpy>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from
matplotlib>wordcloud<2.0,>=1.8->dataprep) (1.1.0)
Requirement already satisfied: cycycler>=0.10 in /usr/local/lib/python3.10/dist-
packages (from matplotlib>wordcloud<2.0,>=1.8->dataprep) (0.11.0)
Requirement already satisfied: fonttools>=4.22.0 in
/usr/local/lib/python3.10/dist-packages (from
matplotlib>wordcloud<2.0,>=1.8->dataprep) (4.42.0)

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Requirement already satisfied: kiwisolver>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib->wordcloud<2.0,>=1.8->dataprep) (1.4.4)

Requirement already satisfied: parso<0.9.0,>=0.8.3 in /usr/local/lib/python3.10/dist-packages (from jedi>=0.16->ipython>=4.0.0->ipywidgets<8.0,>=7.5->dataprep) (0.8.3)

Requirement already satisfied: pyzmq<25,>=17 in /usr/local/lib/python3.10/dist-packages (from notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (23.2.1)

Requirement already satisfied: argon2-cffi in /usr/local/lib/python3.10/dist-packages (from notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (23.1.0)

Requirement already satisfied: jupyter-core>=4.6.1 in /usr/local/lib/python3.10/dist-packages (from notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (5.3.1)

Requirement already satisfied: nbformat in /usr/local/lib/python3.10/dist-packages (from notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (5.9.2)

Requirement already satisfied: nbconvert>=5 in /usr/local/lib/python3.10/dist-packages (from notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (6.5.4)

Requirement already satisfied: nest-asyncio>=1.5 in /usr/local/lib/python3.10/dist-packages (from notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (1.5.7)

Requirement already satisfied: Send2Trash>=1.8.0 in /usr/local/lib/python3.10/dist-packages (from notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (1.8.2)

Requirement already satisfied: terminado>=0.8.3 in /usr/local/lib/python3.10/dist-packages (from notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (0.17.1)

Requirement already satisfied: prometheus-client in /usr/local/lib/python3.10/dist-packages (from notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (0.17.1)

Requirement already satisfied: nbclassic>=0.4.7 in /usr/local/lib/python3.10/dist-packages (from notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (1.0.0)

Requirement already satisfied: ptyprocess>=0.5 in /usr/local/lib/python3.10/dist-packages (from

pexpect>4.3->ipython>=4.0.0->ipywidgets<8.0,>=7.5->dataprep) (0.7.0)  
 Requirement already satisfied: wcwidth in /usr/local/lib/python3.10/dist-packages (from prompt-toolkit!=3.0.0,!<3.0.1,<3.1.0,>=2.0.0->ipython>=4.0.0->ipywidgets<8.0,>=7.5->dataprep) (0.2.6)  
 Requirement already satisfied: platformdirs>=2.5 in /usr/local/lib/python3.10/dist-packages (from jupyter-core>=4.6.1->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (3.10.0)  
 Requirement already satisfied: jupyter-server>=1.8 in /usr/local/lib/python3.10/dist-packages (from nbclassic>=0.4.7->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (1.24.0)  
 Requirement already satisfied: notebook-shim>=0.2.3 in /usr/local/lib/python3.10/dist-packages (from nbclassic>=0.4.7->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (0.2.3)  
 Requirement already satisfied: lxml in /usr/local/lib/python3.10/dist-packages (from nbconvert>=5->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (4.9.3)  
 Requirement already satisfied: beautifulsoup4 in /usr/local/lib/python3.10/dist-packages (from nbconvert>=5->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (4.11.2)  
 Requirement already satisfied: bleach in /usr/local/lib/python3.10/dist-packages (from nbconvert>=5->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (6.0.0)  
 Requirement already satisfied: defusedxml in /usr/local/lib/python3.10/dist-packages (from nbconvert>=5->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (0.7.1)  
 Requirement already satisfied: entrypoints>=0.2.2 in /usr/local/lib/python3.10/dist-packages (from nbconvert>=5->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (0.4)  
 Requirement already satisfied: jupyterlab-pygments in /usr/local/lib/python3.10/dist-packages (from nbconvert>=5->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (0.2.2)  
 Requirement already satisfied: mistune<2,>=0.8.1 in /usr/local/lib/python3.10/dist-packages (from nbconvert>=5->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (0.8.4)  
 Requirement already satisfied: nbclient>=0.5.0 in /usr/local/lib/python3.10/dist-packages (from nbconvert>=5->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (0.8.0)  
 Requirement already satisfied: pandocfilters>=1.4.1 in /usr/local/lib/python3.10/dist-packages (from nbconvert>=5->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (1.5.0)  
 Requirement already satisfied: tinycss2 in /usr/local/lib/python3.10/dist-packages (from nbconvert>=5->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (1.2.1)  
 Requirement already satisfied: fastjsonschema in /usr/local/lib/python3.10/dist-packages (from nbformat->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (2.18.0)  
 Requirement already satisfied: jsonschema>=2.6 in /usr/local/lib/python3.10/dist-packages (from nbformat->notebook>=4.4.1->widgets

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nbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (4.19.0)
Requirement already satisfied: argon2-cffi-bindings in
/usr/local/lib/python3.10/dist-packages (from argon2-cffi->notebook>=4.4.1->widg
etsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (21.2.0)
Requirement already satisfied: jsonschema-specifications>=2023.03.6 in
/usr/local/lib/python3.10/dist-packages (from jsonschema>=2.6->nbformat->noteboo
k>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (2023.7.1)
Requirement already satisfied: referencing>=0.28.4 in
/usr/local/lib/python3.10/dist-packages (from jsonschema>=2.6->nbformat->noteboo
k>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (0.30.2)
Requirement already satisfied: rpds-py>=0.7.1 in /usr/local/lib/python3.10/dist-
packages (from jsonschema>=2.6->nbformat->notebook>=4.4.1->widgetsnbextension~=3
.6.0->ipywidgets<8.0,>=7.5->dataprep) (0.9.2)
Requirement already satisfied: anyio<4,>=3.1.0 in
/usr/local/lib/python3.10/dist-packages (from jupyter-server>=1.8->nbclassic>=0.
4.7->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep)
(3.7.1)
Requirement already satisfied: websocket-client in
/usr/local/lib/python3.10/dist-packages (from jupyter-server>=1.8->nbclassic>=0.
4.7->notebook>=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep)
(1.6.1)
Requirement already satisfied: cffi>=1.0.1 in /usr/local/lib/python3.10/dist-
packages (from argon2-cffi-bindings->argon2-cffi->notebook>=4.4.1->widgetsnbexte
nsion~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (1.15.1)
Requirement already satisfied: soupsieve>1.2 in /usr/local/lib/python3.10/dist-
packages (from beautifulsoup4->nbconvert>=5->notebook>=4.4.1->widgetsnbextension
~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (2.4.1)
Requirement already satisfied: webencodings in /usr/local/lib/python3.10/dist-
packages (from bleach->nbconvert>=5->notebook>=4.4.1->widgetsnbextension~=3.6.0-
>ipywidgets<8.0,>=7.5->dataprep) (0.5.1)
Requirement already satisfied: sniffio>=1.1 in /usr/local/lib/python3.10/dist-
packages (from anyio<4,>=3.1.0->jupyter-server>=1.8->nbclassic>=0.4.7->notebook>
=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (1.3.0)
Requirement already satisfied: exceptiongroup in /usr/local/lib/python3.10/dist-
packages (from anyio<4,>=3.1.0->jupyter-server>=1.8->nbclassic>=0.4.7->notebook>
=4.4.1->widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (1.1.3)
Requirement already satisfied: pyparser in /usr/local/lib/python3.10/dist-
packages (from cffi>=1.0.1->argon2-cffi-bindings->argon2-cffi->notebook>=4.4.1->
widgetsnbextension~=3.6.0->ipywidgets<8.0,>=7.5->dataprep) (2.21)
Building wheels for collected packages: sqlalchemy, metaphone
  Building wheel for sqlalchemy (setup.py) ... done
  Created wheel for sqlalchemy:
filename=SQLAlchemy-1.3.24-cp310-cp310-linux_x86_64.whl size=1252698
sha256=b2efe44418dca6adc05a035dd5f1e8f1acb1eda2435a6efc912f7b64a3a7aca0
  Stored in directory: /root/.cache/pip/wheels/27/51/b3/3481e88d5a5ba95dd4aafedc
9316774d941c4ba61cfb93add8
  Building wheel for metaphone (setup.py) ... done
  Created wheel for metaphone: filename=Metaphone-0.6-py3-none-any.whl

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size=13901
sha256=210167338c6671eaf5f9f9aa1c1b08204c75191cbbf5e856bb9f7b794c046f11
  Stored in directory: /root/.cache/pip/wheels/23/dd/1d/6cdd346605db62bde1f60954
155e9ce48f4681c243f265b704
Successfully built sqlalchemy metaphone
Installing collected packages: regex, python-stdnum, python-crfsuite, pure_eval,
ply, metaphone, executing, sqlalchemy, rapidfuzz, jsonpath-ng, jinja2,
asttokens, varname, flask_cors, dataprep
  Attempting uninstall: regex
    Found existing installation: regex 2023.6.3
    Uninstalling regex-2023.6.3:
      Successfully uninstalled regex-2023.6.3
  Attempting uninstall: sqlalchemy
    Found existing installation: SQLAlchemy 2.0.20
    Uninstalling SQLAlchemy-2.0.20:
      Successfully uninstalled SQLAlchemy-2.0.20
  Attempting uninstall: jinja2
    Found existing installation: Jinja2 3.1.2
    Uninstalling Jinja2-3.1.2:
      Successfully uninstalled Jinja2-3.1.2
ERROR: pip's dependency resolver does not currently take into account all
the packages that are installed. This behaviour is the source of the following
dependency conflicts.

ipython-sql 0.5.0 requires sqlalchemy>=2.0, but you have sqlalchemy 1.3.24 which
is incompatible.

Successfully installed asttokens-2.2.1 dataprep-0.4.5 executing-0.8.3
flask_cors-3.0.10 jinja2-3.0.3 jsonpath-ng-1.5.3 metaphone-0.6 ply-3.11
pure_eval-0.2.2 python-crfsuite-0.9.8 python-stdnum-1.19 rapidfuzz-2.15.1
regex-2021.11.10 sqlalchemy-1.3.24 varname-0.8.3

```

```

[ ]: from dataprep.eda import create_report

report = create_report(df, title = 'My Report')

report

```

```
[ ]:
```

```
[ ]:
```