```
#importing libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestRegressor
from sklearn.linear_model import LinearRegression
from sklearn import metrics
```

```
#Load data
file_path = "/content/project - Gold Data/gld_price_data.csv"
df = pd.read_csv(file_path)
```

```
# print first 5 rows in the dataframe
df.head()
```

	Date	SPX	GLD	USO	SLV	EUR/USD
0	1/2/2008	1447.160034	84.860001	78.470001	15.180	1.471692
1	1/3/2008	1447.160034	85.570000	78.370003	15.285	1.474491
2	1/4/2008	1411.630005	85.129997	77.309998	15.167	1.475492
3	1/7/2008	1416.180054	84.769997	75.500000	15.053	1.468299
4	1/8/2008	1390.189941	86.779999	76.059998	15.590	1.557099

Next steps: Generate code with df | View recommended plots | New interactive sheet

```
# print last 5 rows of the dataframe
df.tail()
```

	Date	SPX	GLD	USO	SLV	EUR/USD
2285	5/8/2018	2671.919922	124.589996	14.0600	15.5100	1.186789
2286	5/9/2018	2697.790039	124.330002	14.3700	15.5300	1.184722
2287	5/10/2018	2723.070068	125.180000	14.4100	15.7400	1.191753
2288	5/14/2018	2730.129883	124.489998	14.3800	15.5600	1.193118
2289	5/16/2018	2725.780029	122.543800	14.4058	15.4542	1.182033

```
# getting some basic informations about the data
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2290 entries, 0 to 2289
Data columns (total 6 columns):
 #   Column   Non-Null Count  Dtype  
---  ------   --------------  -----  
 0   Date     2290 non-null   object 
 1   SPX      2290 non-null   float64
 2   GLD      2290 non-null   float64
 3   USO      2290 non-null   float64
 4   SLV      2290 non-null   float64
 5   EUR/USD  2290 non-null   float64
dtypes: float64(5), object(1)
memory usage: 107.5+ KB
```

```
# checking the number of missing values
df.isnull().sum()
```

gld_price_data.csv ✕

What can I help you build?

```
               0
Date           0
SPX            0
GLD            0
USO            0
SLV            0
EUR/USD        0

dtype: int64
```

```
# getting the statistical measures of the data
df.describe()
```

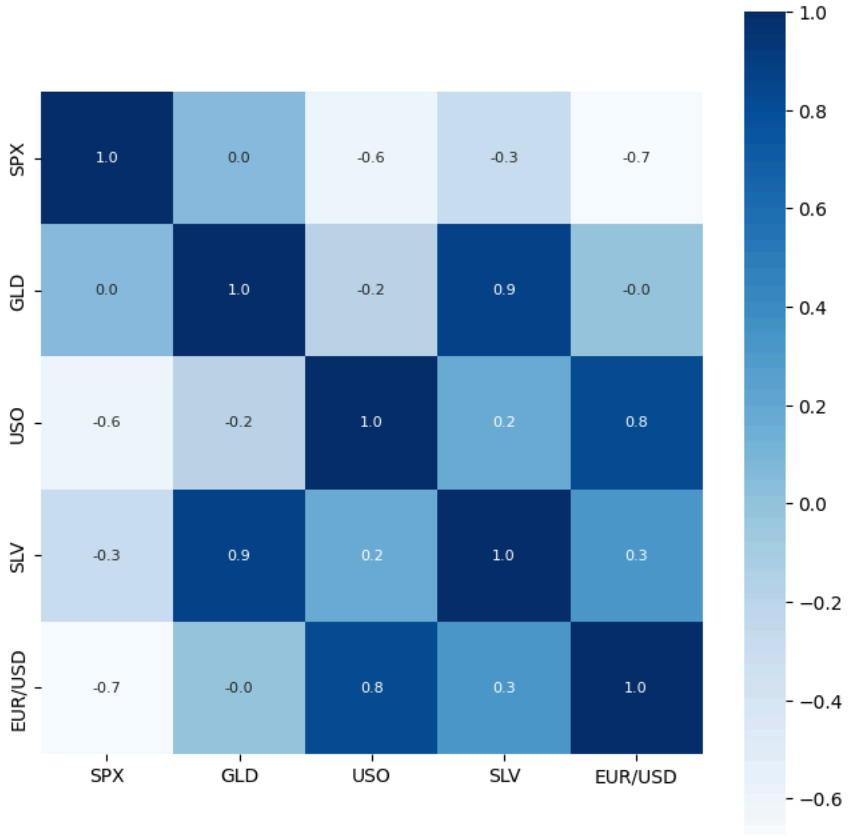
```
               SPX          GLD          USO          SLV      EUR/USD
count  2290.000000  2290.000000  2290.000000  2290.000000  2290.000000
mean   1654.315776   122.732875    31.842221    20.084997     1.283653
std     519.111540    23.283346    19.523517     7.092566     0.131547
min     676.530029    70.000000     7.960000     8.850000     1.039047
25%    1239.874969   109.725000    14.380000    15.570000     1.171313
50%    1551.434998   120.580002    33.869999    17.268500     1.303297
75%    2073.010070   132.840004    37.827501    22.882500     1.369971
max    2872.870117   184.589996   117.480003    47.259998     1.598798
```

```
#correlation = df.corr()

correlation = df.select_dtypes(include=['number']).corr()
```

```
# constructing a heatmap to understand the correlatiom
plt.figure(figsize = (8,8))
sns.heatmap(correlation, cbar=True, square=True, fmt='.1f', annot=True, annot_kws={'size':8}, cmap='Blues')
```

```
<Axes: >
```



```
# correlation values of GLD
print(correlation['GLD'])
```

```
SPX        0.049345
GLD        1.000000
USO       -0.186360
SLV        0.866632
EUR/USD   -0.024375
Name: GLD, dtype: float64
```

```
# checking the distribution of the GLD Price
sns.distplot(df['GLD'],color='green')
```

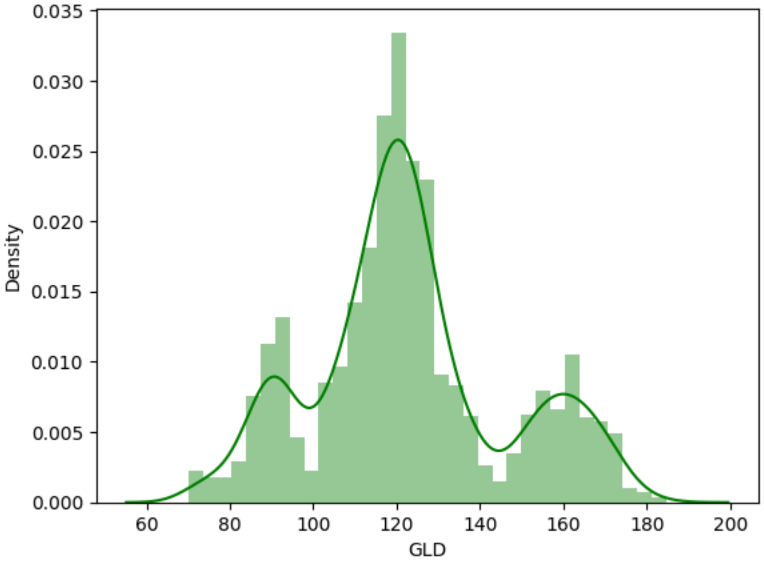
```
/tmp/ipython-input-30-579954715.py:2: UserWarning:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

  sns.distplot(df['GLD'],color='green')
<Axes: xlabel='GLD', ylabel='Density'>
```



```
#X = df.drop(['Date','GLD'],axis=1)
#Y = df['GLD']

from sklearn.model_selection import train_test_split

X = df.drop(['Date','GLD'], axis=1)
Y = df['GLD']

X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size=0.2, random_state=2)
```

```
print(X)
```

```
              SPX        USO      SLV   EUR/USD
0     1447.160034  78.470001  15.1800  1.471692
1     1447.160034  78.370003  15.2850  1.474491
2     1411.630005  77.309998  15.1670  1.475492
3     1416.180054  75.500000  15.0530  1.468299
4     1390.189941  76.059998  15.5900  1.557099
...           ...        ...      ...       ...
2285  2671.919922  14.060000  15.5100  1.186789
2286  2697.790039  14.370000  15.5300  1.184722
2287  2723.070068  14.410000  15.7400  1.191753
2288  2730.129883  14.380000  15.5600  1.193118
2289  2725.780029  14.405800  15.4542  1.182033

[2290 rows x 4 columns]
```

```
print(Y)
```

```
0        84.860001
1        85.570000
2        85.129997
3        84.769997
4        86.779999
           ...
2285    124.589996
2286    124.330002
2287    125.180000
2288    124.489998
2289    122.543800
Name: GLD, Length: 2290, dtype: float64
```

```
#Splitting into Training data and Test Data
#X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size = 0.2, random_state=2)

from sklearn.linear_model import LinearRegression

model = LinearRegression()
model.fit(X_train, Y_train)
```

```
▾ LinearRegression ⓘ ?
LinearRegression()
```