```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
import seaborn as sns
%matplotlib inline
from sklearn.model_selection import train_t
from sklearn.preprocessing import StandardSc
from sklearn.ensemble import GradientBoosting
from sklearn.metrics import mean_absolute_er
from sklearn.metrics import r2_score, mean_s
from sklearn.model_selection import GridSear
from sklearn.ensemble import RandomForestRegr
from sklearn.linear_model import Lasso, Elas
from sklearn.tree import DecisionTreeRegress
from sklearn.ensemble import AdaBoostRegress
from sklearn.ensemble import ExtraTreesRegre
from sklearn.svm import SVR
from sklearn.neighbors import KNeighborsRegr
from sklearn.model_selection import cross_va
from sklearn.model_selection import RandomSe
from sklearn.feature_selection import SelectK
from sklearn.feature_selection import chi2,
from sklearn.feature_selection import mutual
%matplotlib inline
```

data.head()

	TEMP	LUMINOSITY	RADIUS	MAGNITUDE	Angsuman	Gunawan	Hendrawati	Hendrayana	Hendriyana	Hermawan	Hermawan	Hermawan	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat
0	3068	0.00024	-0.17000	-12.92000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000	0.01000000
1	3042	0.00500	0.077	-2.244	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
2	2600	0.70500	0.192	11.381	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062
3	2800	0.00080	0.0842	-7.543	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044
4	1939	0.00138	0.0767	-8.828	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035

5 rows × 241 columns

data.shape

(240, 241)

data.info()

```
<class 'pandas.core.frame.
RangeIndex: 240 entries, 0
Columns: 241 entries, TEMP
dtypes: float64(240), int6
memory usage: 441.5 KB
```

data.describe()

	TEMP	LUMINOSITY	RADIUS	MAGNITUDE	Angsuman	Gunawan	Hendrawati	Hendrayana	Hendriyana	Hermawan	Hermawan	Hermawan	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat	Hidayat
count	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000	240.000000
mean	12.500000	107.188422	237.157837	-5.878995	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213	0.419213
std	12.500000	148.115660	517.188245	9.395108	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398	0.516398
min	0.000000	0.000080	-0.17000	-48.810000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25%	3.000000	0.000800	0.00975	-11.944000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
50%	8.000000	0.070500	0.0842	-8.135000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000	0.044000
75%	17.000000	202.080000	237.157837	-2.244000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000	0.062000
max	40.000000	737.000000	2372.000000	20.732000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000	3.828000

data.info()

```
<class 'pandas.core.frame.
RangeIndex: 240 entries, 0
Columns: 241 entries, TEMP
dtypes: float64(240), int6
memory usage: 441.5 KB
```

data.columns

```
Index(['TEMP', 'LUMINOSITY', 'RADIUS', 'MAGNITUDE',
       'Angsuman', 'Gunawan', 'Hendrawati', 'Hendrayana',
       'Hendriyana', 'Hermawan', 'Hermawan', 'Hermawan',
       'Hidayat', 'Hidayat', 'Hidayat', 'Hidayat',
       'Hidayat', 'Hidayat', 'Hidayat', 'Hidayat',
       'Hidayat', 'Hidayat',
       'Hidayatullah', 'Hidayatullah', 'Hidayatullah
```