

```
In [1]: import pandas
from datetime import date
from sklearn.metrics import r2_score
from sklearn.linear_model import Ridge
from sklearn.model_selection import train_test_split
```

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In [2]: data = pandas.read_csv("../Dataset/AlteredColumns.csv")
```

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In [3]: data.head(5)
```

```
Out[3]:
```

	PeriodStart	AirTemp	CloudOpacity	DewpointTemp	Ghi	PrecipitableWater	RelativeHumidity
0	2022-01-31T00:00:00Z	5.3	4.0	4.0	0	11.1	
1	2022-01-31T00:05:00Z	5.3	3.5	3.9	0	11.2	
2	2022-01-31T00:10:00Z	5.2	2.0	3.9	0	11.2	
3	2022-01-31T00:15:00Z	5.2	0.4	3.8	0	11.2	
4	2022-01-31T00:20:00Z	5.2	0.0	3.7	0	11.2	

```
In [4]: data["PeriodStart"] = data["PeriodStart"].astype(str)
data["PeriodStart"] = data["PeriodStart"].str.replace('T', ' ')
data["PeriodStart"] = data["PeriodStart"].str.replace('Z', '')
data.head(5)
```

```
Out[4]:
```

	PeriodStart	AirTemp	CloudOpacity	DewpointTemp	Ghi	PrecipitableWater	RelativeHumidity
0	2022-01-31 00:00:00	5.3	4.0	4.0	0	11.1	
1	2022-01-31 00:05:00	5.3	3.5	3.9	0	11.2	
2	2022-01-31 00:10:00	5.2	2.0	3.9	0	11.2	
3	2022-01-31 00:15:00	5.2	0.4	3.8	0	11.2	
4	2022-01-31 00:20:00	5.2	0.0	3.7	0	11.2	

```
In [5]: data["PeriodStart"] = pandas.to_datetime(data["PeriodStart"], format='%Y-%m-%d %H:%M:%S')
data.head(5)
```

Out[5]:

	PeriodStart	AirTemp	CloudOpacity	DewpointTemp	Ghi	PrecipitableWater	Relative
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0	2022-01-31 00:00:00	5.3	4.0	4.0	0	11.1	
1	2022-01-31 00:05:00	5.3	3.5	3.9	0	11.2	
2	2022-01-31 00:10:00	5.2	2.0	3.9	0	11.2	
3	2022-01-31 00:15:00	5.2	0.4	3.8	0	11.2	
4	2022-01-31 00:20:00	5.2	0.0	3.7	0	11.2	

In [6]:

```
data["hour"] = data["PeriodStart"].map(lambda x: x.hour)
data["minutes"] = data["PeriodStart"].map(lambda x: x.minute)
data["day"] = data['PeriodStart'].map(lambda x: x.day)
data["month"] = data['PeriodStart'].map(lambda x: x.month)
data["year"] = data['PeriodStart'].map(lambda x: x.year)
data = data.drop(['PeriodStart'], axis=1)
data.head(5)
```

Out[6]:

	AirTemp	CloudOpacity	DewpointTemp	Ghi	PrecipitableWater	RelativeHumidity	S
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0	5.3	4.0	4.0	0	11.1	91.2	
1	5.3	3.5	3.9	0	11.2	91.1	
2	5.2	2.0	3.9	0	11.2	90.9	
3	5.2	0.4	3.8	0	11.2	90.8	
4	5.2	0.0	3.7	0	11.2	90.6	

In [7]:

```
X = data.drop(["Ghi"], axis=1)
y = data["Ghi"]
```

In [8]:

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.33, random
```

In [9]:

```
model = Ridge(alpha=1.2)
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In [10]:

```
model.fit(X_train, y_train)
```

Out[10]:

▼ Ridge

Ridge(alpha=1.2)

In [11]:

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y_pred = model.predict(X_test)
```

In [12]:

```
acc = r2_score(y_test, y_pred)*100
```

In [13]:

```
print("Accuracy of the model is: ", acc)
```

Accuracy of the model is: 63.23819633278642