

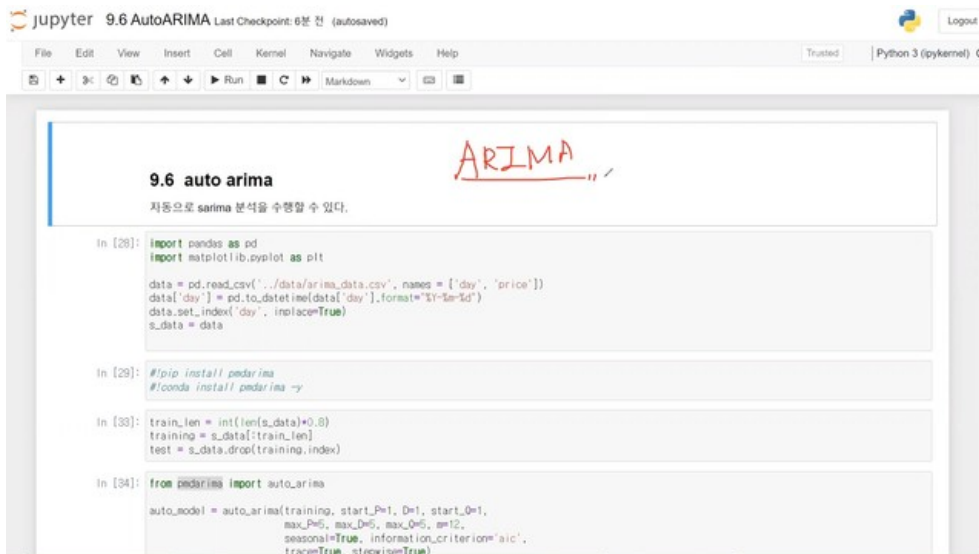
09

Auto-ARIMA 실습

[Auto - ARIMA 모형 생성]

SARIMA의 매개변수인(p,d,q)와 P,D,Q,s의 최적의 조합을 auto-arima를 통해서 구할 수 있습니다.

00:00



```

In [28]: import pandas as pd
import matplotlib.pyplot as plt

data = pd.read_csv('../data/arima_data.csv', names = ['day', 'price'])
data['day'] = pd.to_datetime(data['day'], format='%Y-%m-%d')
data.set_index('day', inplace=True)
s_data = data

In [29]: #pip install pmdarima
#conda install pmdarima -y

In [33]: train_len = int(len(s_data)*0.8)
training = s_data[:train_len]
test = s_data.drop(training.index)

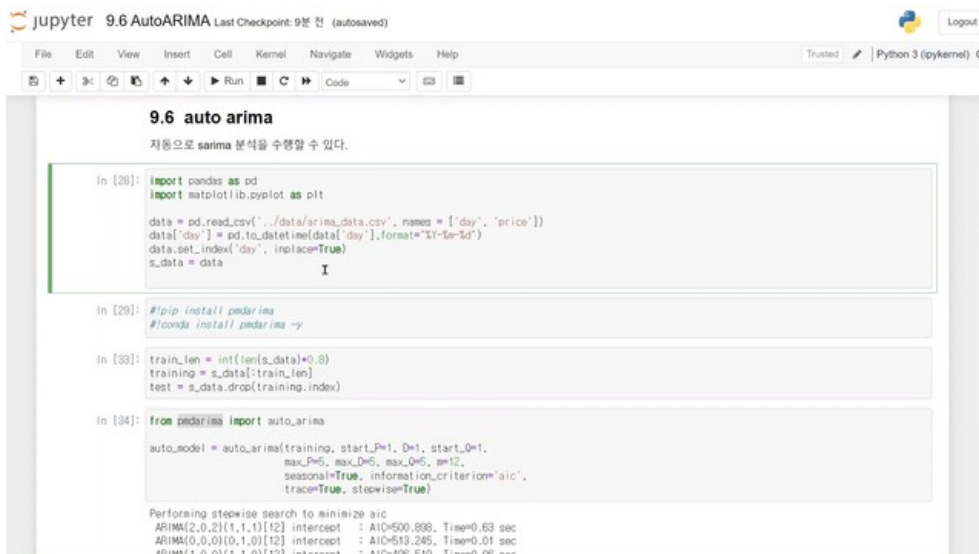
In [34]: from pmdarima import auto_arima

auto_model = auto_arima(training, start_P=1, D=1, start_Q=1,
                        max_P=6, max_D=6, max_Q=6, m=12,
                        seasonal=True, information_criterion='aic',
                        trace=True, stepwise=True)
  
```

[Auto _ARIMA 실습]

설치 : !pip install pmdarima

03:11



```

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Performing stepwise search to minimize aic
ARIMA(2,0,2)(1,1,1)[12] intercept : AIC=500.898, Time=0.63 sec
ARIMA(0,0,0)(0,1,0)[12] intercept : AIC=519.245, Time=0.01 sec
ARIMA(1,0,0)(1,1,0)[12] intercept : AIC=496.519, Time=0.06 sec
  
```

[Auto _ARIMA 해석]

04:53

jupyter 9.6 AutoARIMA Last Checkpoint: 11분 전 (unsaved changes) [Logout](#)

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```

Performing stepwise search to minimize aic
ARIMA(2,0,2)(1,1,1)[12] intercept : AIC=500.898, Time=0.89 sec
ARIMA(0,0,0)(0,1,0)[12] intercept : AIC=513.245, Time=0.01 sec
ARIMA(1,0,0)(1,1,0)[12] intercept : AIC=496.519, Time=0.06 sec
ARIMA(0,0,1)(0,1,1)[12] intercept : AIC=500.500, Time=0.22 sec
ARIMA(0,0,0)(0,1,0)[12] intercept : AIC=509.050, Time=0.01 sec
ARIMA(1,0,0)(0,1,0)[12] intercept : AIC=496.874, Time=0.09 sec
ARIMA(1,0,0)(0,1,1)[12] intercept : AIC=496.035, Time=0.21 sec
ARIMA(1,0,0)(1,1,1)[12] intercept : AIC=496.479, Time=0.10 sec
ARIMA(2,0,0)(0,1,0)[12] intercept : AIC=497.831, Time=0.13 sec
ARIMA(1,0,1)(0,1,0)[12] intercept : AIC=497.899, Time=0.13 sec
ARIMA(0,0,1)(0,1,0)[12] intercept : AIC=501.105, Time=0.05 sec
ARIMA(2,0,1)(0,1,0)[12] intercept : AIC=499.873, Time=0.12 sec
ARIMA(1,0,0)(0,1,0)[12] intercept : AIC=510.570, Time=0.03 sec

Best model: ARIMA(1,0,0)(0,1,0)[12] intercept
Total fit time: 2.065 seconds

```

In [35]: `auto_model.summary()`

Out[35]:

| SARIMAX Results | |
|-------------------|-------------------------------|
| Dep. Variable: | y |
| No. Observations: | 48 |
| Model: | SARIMAX(1, 0, 0)(0, 1, 0, 12) |
| Log Likelihood: | -244.937 |
| Date: | Thu, 09 Dec 2021 |
| AIC: | 496.874 |
| Time: | 01:02:45 |
| BIC: | 500.625 |
| Sample: | 0 |
| HQIC: | 497.532 |
| | -48 |
| Covariance Type: | opg |