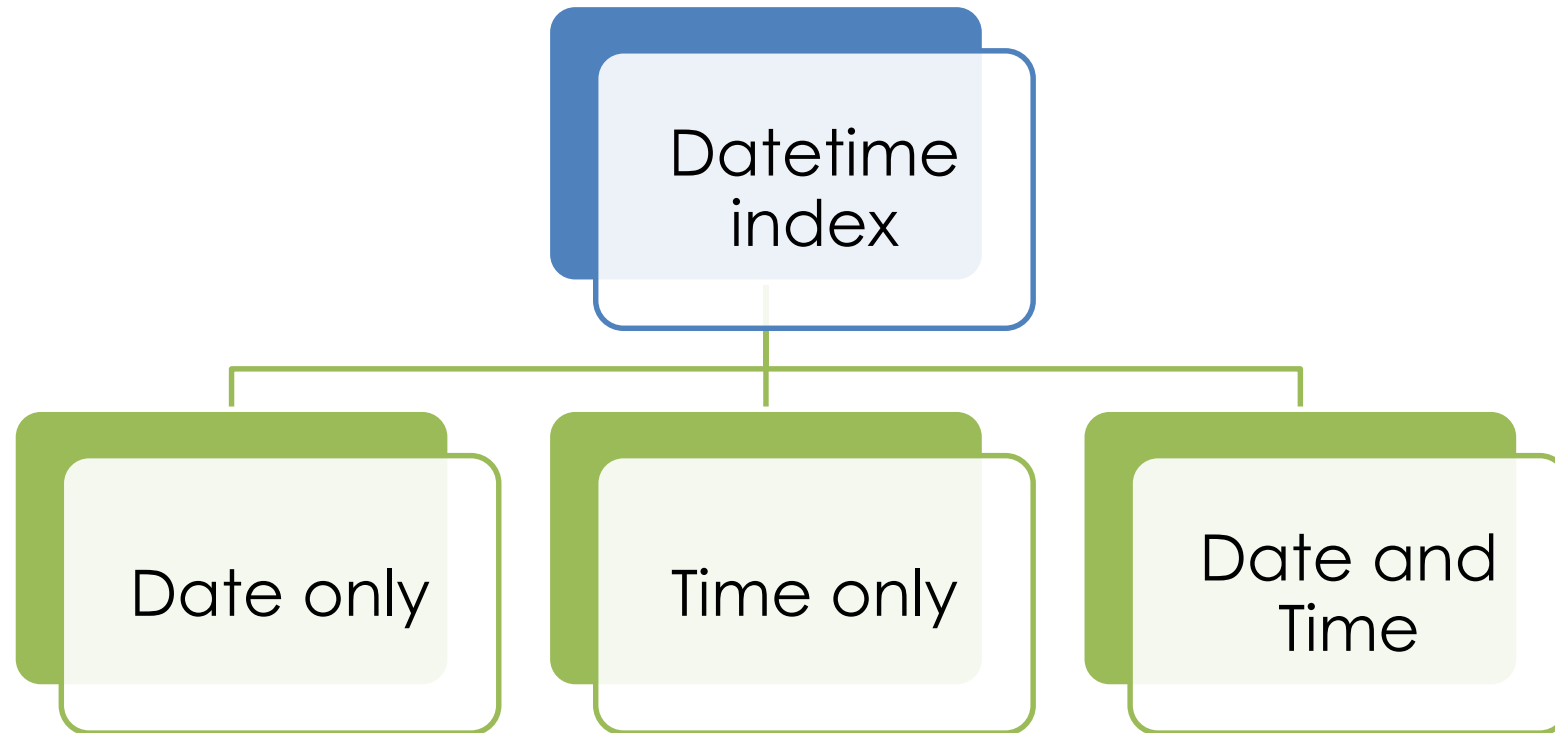


# Features from date and time

---

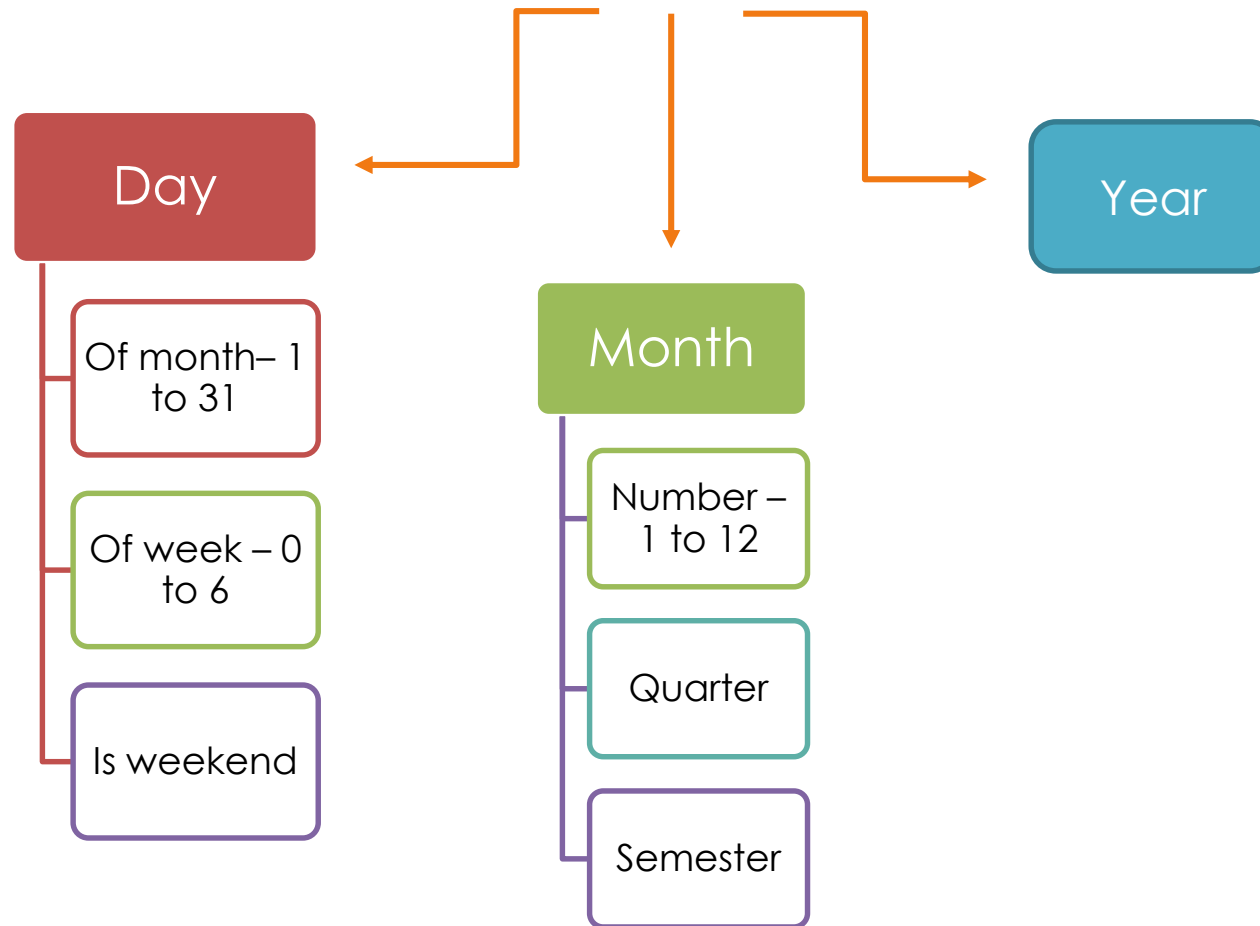
Overview

# Date and Time Variables



# Features from date part

Transaction date ('29-08-1987 15:20.20')



# Features from date part

Transaction date ('29-08-1987 15:20.20')



---

Date First / last of year

---

First / last of quarter

---

Leap year

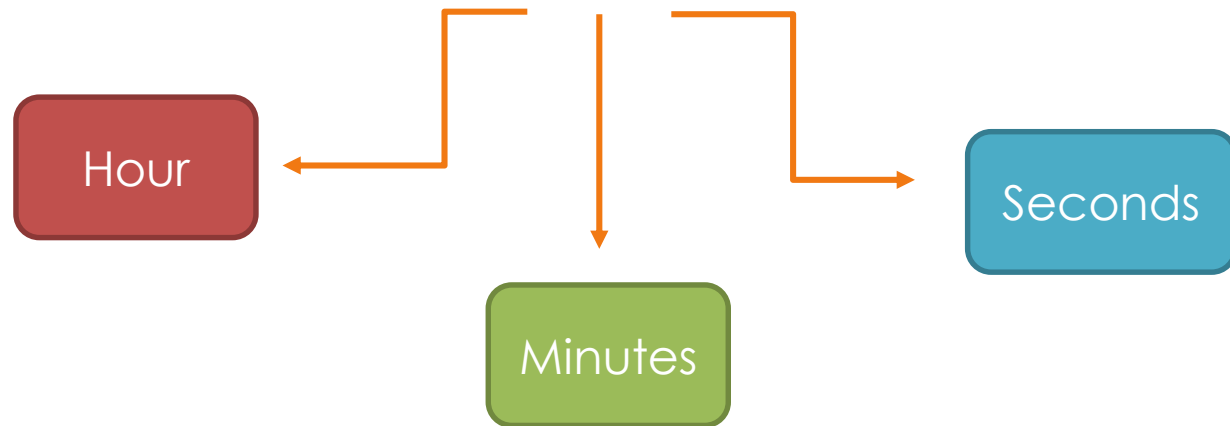
---

Week of year

---

# Features from time part

Transaction date ('29-08-1987 15:20.20')



---

Time    Microsecond

---

Nanosecond

---

# Time zones

Payment date 1 ('29-08-1987 15:20.20+02')

Payment date 2 ('29-10-1993 15:20.20+05')



Payment date 1 ('29-08-1987 13:20.20+00')

Payment date 2 ('29-10-1993 10:20.20+00')

# Pandas dt module

[https://pandas.pydata.org/pandas-docs/stable/user\\_guide/timeseries.html#time-date-components](https://pandas.pydata.org/pandas-docs/stable/user_guide/timeseries.html#time-date-components)

## Time/date components

There are several time/date properties that one can access from `Timestamp` or a collection of timestamps like a `DatetimeIndex`.

Property	Description
year	The year of the datetime
month	The month of the datetime
day	The days of the datetime
hour	The hour of the datetime
minute	The minutes of the datetime
second	The seconds of the datetime
microsecond	The microseconds of the datetime
nanosecond	The nanoseconds of the datetime
date	Returns <code>datetime.date</code> (does not contain timezone information)
time	Returns <code>datetime.time</code> (does not contain timezone information)
timetz	Returns <code>datetime.time</code> as local time with timezone information
dayofyear	The ordinal day of year
day_of_year	The ordinal day of year
weekofyear	The week ordinal of the year
week	The week ordinal of the year

# Feature-engine transformer



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## DatetimeFeatures

```
class feature_engine.datetime.DatetimeFeatures(variables=None, features_to_extract=None, drop_original=True, missing_values='raise', dayfirst=False, yearfirst=False, utc=None):
```

DatetimeFeatures extracts date and time features from datetime variables, adding new columns to [\[source\]](#) the dataset. DatetimeFeatures is able to extract datetime information from existing datetime or object-like variables.

DatetimeFeatures uses `pandas.to_datetime` to convert object variables to datetime and `pandas.dt` to extract the features from datetime.

The transformer supports the extraction of the following features:

- "month"
- "quarter"
- "semester"
- "year"
- "week"
- "day\_of\_week"
- "day\_of\_month"
- "day\_of\_year"
- "weekend"
- "month\_start"
- "month\_end"
- "quarter\_start"

[https://feature-engine.readthedocs.io/en/latest/api\\_doc/datetime/DatetimeFeatures.html](https://feature-engine.readthedocs.io/en/latest/api_doc/datetime/DatetimeFeatures.html)



# Accompanying Jupyter Notebooks



1. Engineering dates
2. Engineering times
3. Automating feature creation with Feature-engine