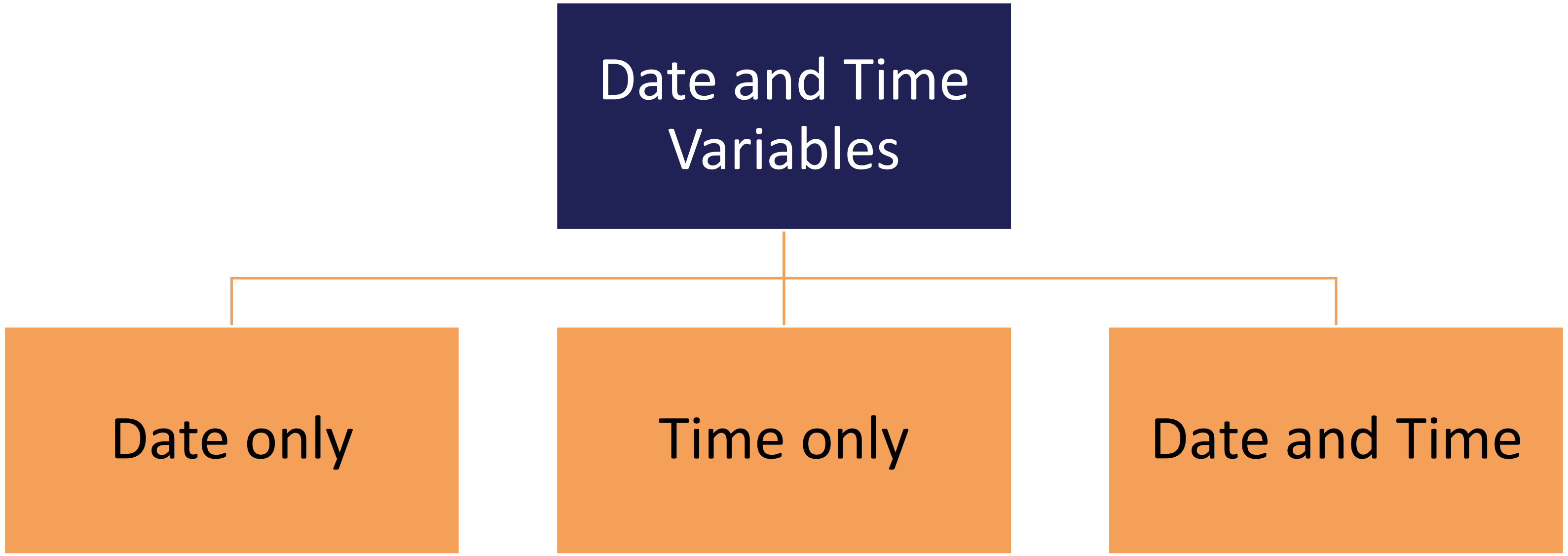
Train In Data

Date and Time Variables

Date and Time Variables



Date and Time Variables

Date only

Time only

Date and Time

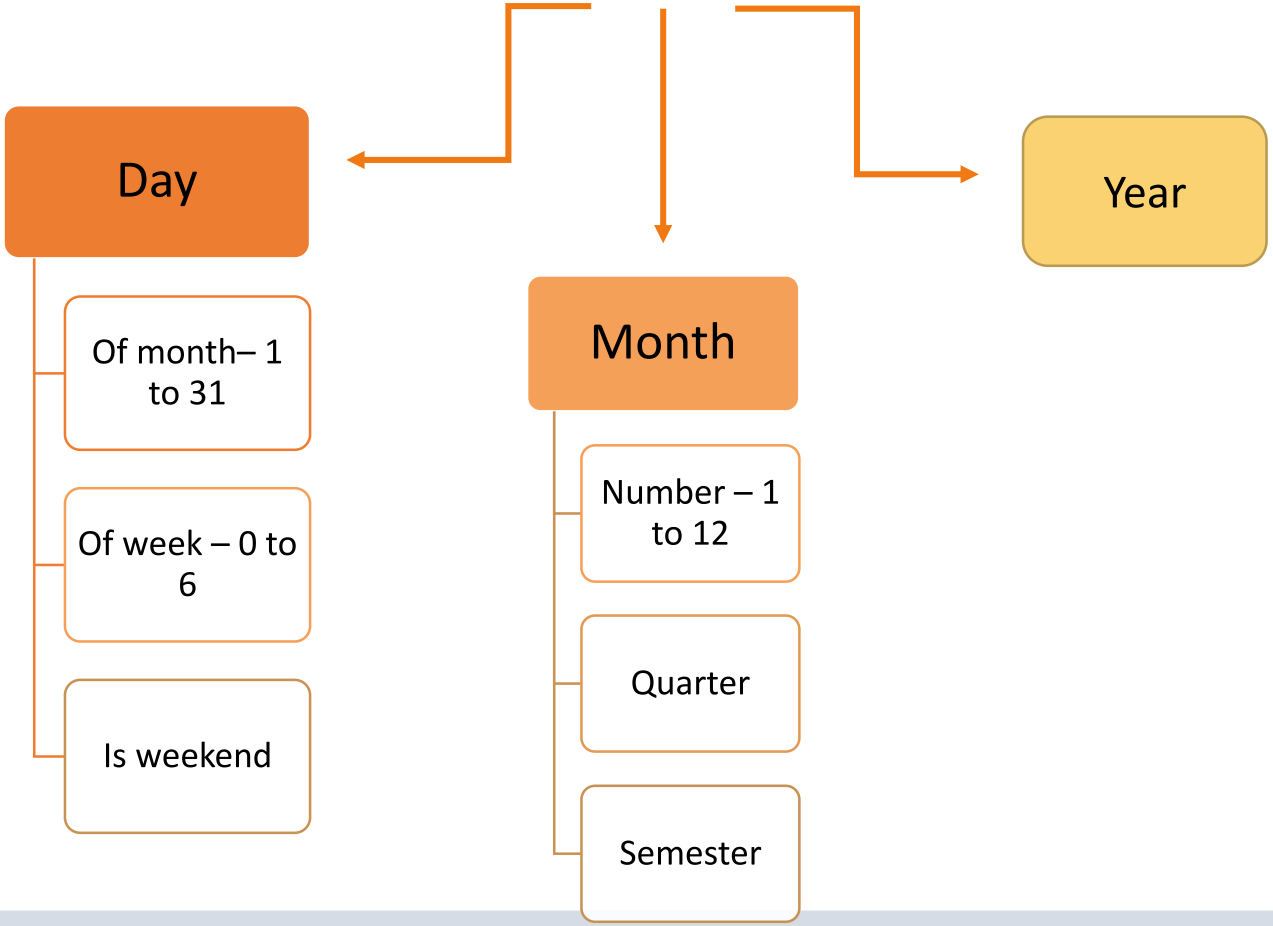
Date and Time Variables

Date and time, or datetime variables they take dates and / or time as values.

- Date of birth ('29-08-1987', '12-01-2012')
- Date of application ('2016-Dec', '2013-March')
- Time of accident (12:20:45)
- Payment date ('29-08-1987 15:20.20‘)

Features from date part

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



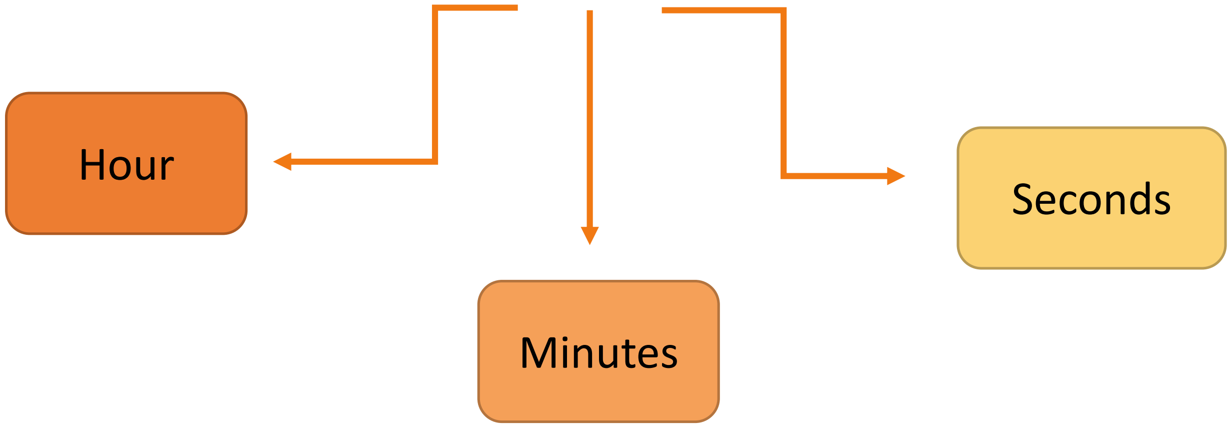
Features from date part

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‘)

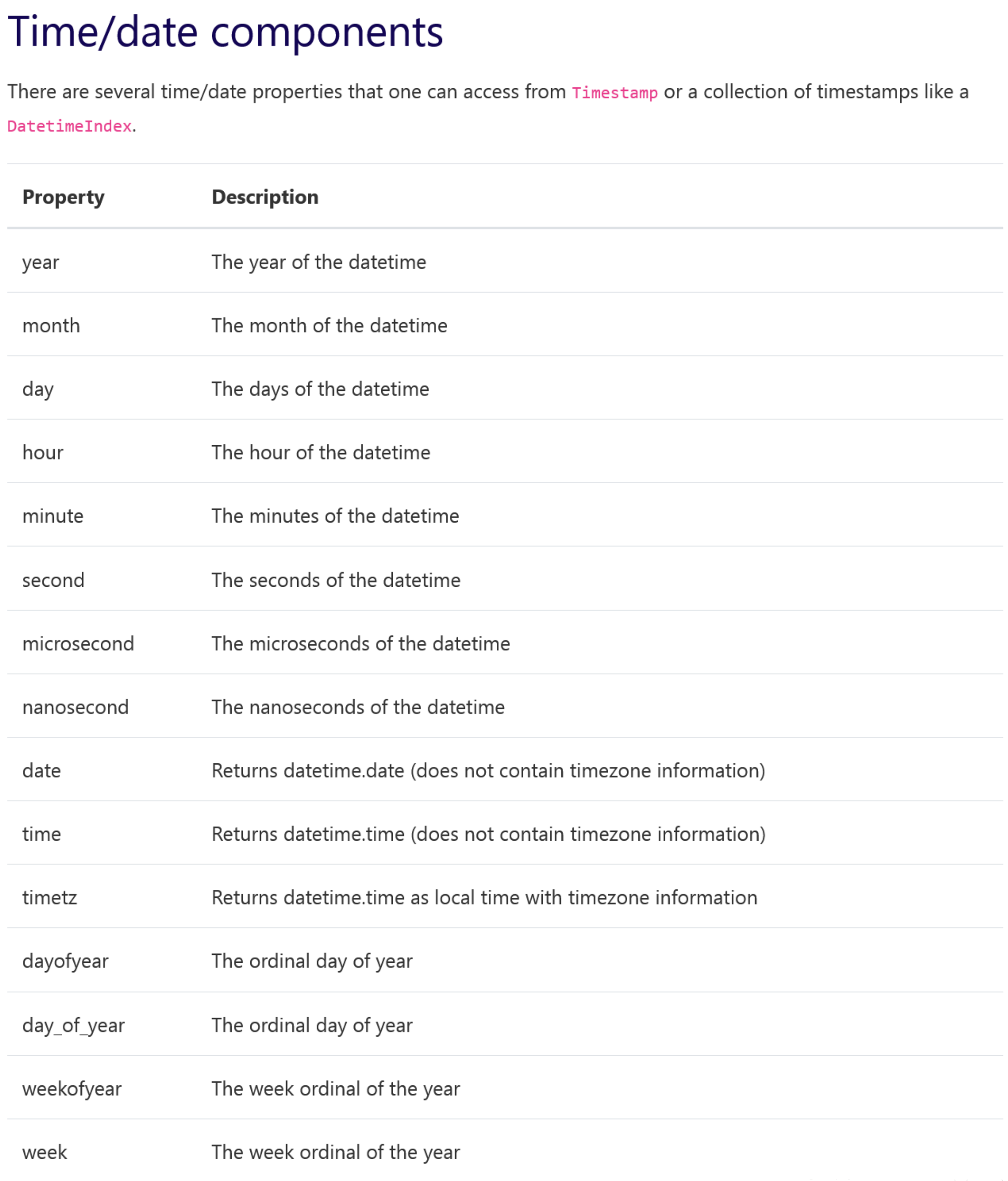
↓

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



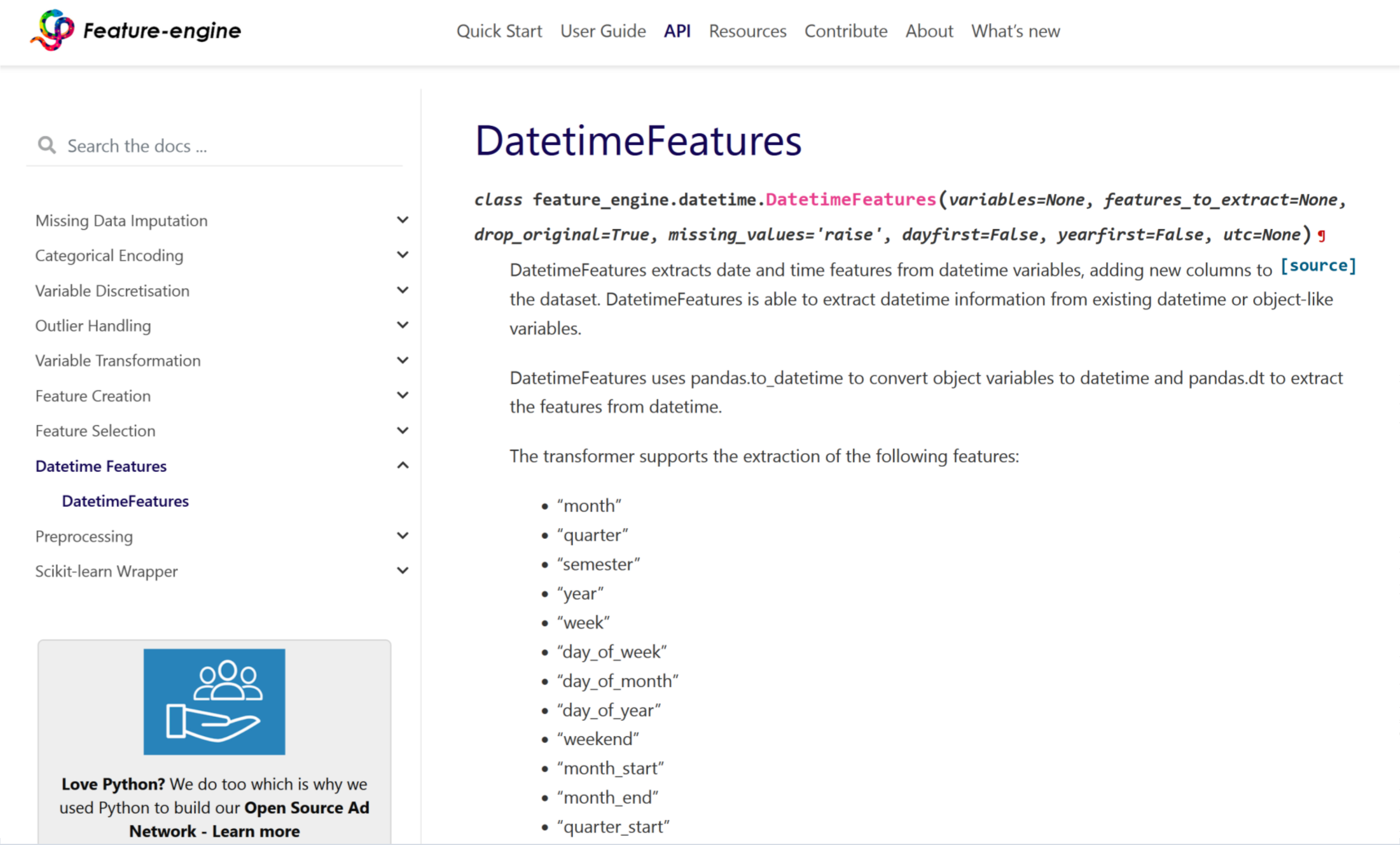
Time/date components

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 datetime.date (does not contain timezone information)
time	Returns datetime.time (does not contain timezone information)
timetz	Returns datetime.time 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

https://feature-engine.readthedocs.io/en/latest/api_doc/datetime/DatetimeFeatures.html



DatetimeFeatures

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

[source]

DatetimeFeatures extracts date and time features from datetime variables, adding new columns to 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"

Accompanying Jupyter Notebooks

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

Train In Data

THANK YOU

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