
AniPython

# 时间序列

# pandas 时间相关四个概念

| 概念 | 标量类 | pandas数据类型 | 创建方法 |
| --- | --- | --- | --- |
| 时间点 | Timestamp | datetime64[ns] | to_datetime<br>date_range |
| 时间段 | Period | period[freq] | Period<br>period_range |
| 时间增量 | Timedelta | timedelta64[ns] | to_timedelta<br>timedelta_range |
| 时间偏移量 | DateOffset | None | DateOffset |

# 时间点 VS 时间段

```
pd.Series([
    '2020-01-01',
    '2020-01-02'
], dtype='datetime64[ns]')
```

| | |
|---|---|
| 0 | 2020-01-01 |
| 1 | 2020-01-02 |
| dtype: datetime64[ns] | |

```
pd.Series([
    '2020-01-01',
    '2020-01-02',
], dtype='period[D]')
```

| | |
|---|---|
| 0 | 2020-01-01 |
| 1 | 2020-01-02 |
| dtype: period[D] | |

# 时间点 VS 时间段

```
pd.Series([
    '2020-01-01',
    '2020-01-02'
], dtype='datetime64[ns]')
```

`Timestamp('2020-01-01 00:00:00')`

| | |
|---|---|
| 0 | 2020-01-01 |
| 1 | 2020-01-02 |
| dtype: datetime64[ns] | |

```
pd.Series([
    '2020-01-01',
    '2020-01-02',
], dtype='period[D]')
```

`Period('2020-01-01', 'D')`

| | |
|---|---|
| 0 | 2020-01-01 |
| 1 | 2020-01-02 |
| dtype: period[D] | |

# 时间增量 VS 时间偏移量

```
pd.Series([
    pd.Timedelta(days=1),
    pd.Timedelta(days=2),
])
```

| | |
|---|---|
| 0 | 1 days |
| 1 | 2 days |
| dtype: timedelta64[ns] | |

```
pd.Series([
    pd.DateOffset(days=1),
    pd.DateOffset(days=2),
])
```

| | |
|---|---|
| 0 | <DateOffset: days=1> |
| 1 | <DateOffset: days=2> |
| dtype: object | |

# 时间增量 VS 时间偏移量

```
pd.Series([
    pd.Timedelta(days=1),
    pd.Timedelta(days=2),
])
```

```
Timedelta('1 days 00:00:00')
```

| | |
|---|---|
| 0 | 1 days |
| 1 | 2 days |
| dtype: timedelta64[ns] | |

```
pd.Series([
    pd.DateOffset(days=1),
    pd.DateOffset(days=2),
])
```

```
<DateOffset: days=1>
```

| | |
|---|---|
| 0 | <DateOffset: days=1> |
| 1 | <DateOffset: days=2> |
| dtype: object | |