Monotonic encoding

Wrap up

Monotonic encoding methods

```
                    ┌─────────────────────┐
                    │     Monotonic       │
                    │     methods         │
                    └─────────────────────┘
                              │
        ┌─────────────────────┼─────────────────────┐
┌───────────────┐   ┌───────────────────┐   ┌───────────────────┐
│ Ordered       │   │ Mean encoding     │   │ Weight of         │
│ ordinal       │   │ (smoothing)       │   │ evidence          │
│ encoding      │   │                   │   │                   │
└───────────────┘   └───────────────────┘   └───────────────────┘
```

Monotonic encoding methods

```
                    ┌─────────────────┐
                    │   Monotonic     │
                    │    methods      │
                    └─────────────────┘
              ┌────────────┼────────────┐
┌──────────────┐  ┌──────────────┐  ┌──────────────┐
│ Ordered      │  │ Mean         │  │ Weight of    │
│ ordinal      │  │ encoding     │  │ evidence     │
│ encoding     │  │ (smoothing)  │  │              │
└──────────────┘  └──────────────┘  └──────────────┘
      │                  │                  │
   ┌──────────────┐  ┌──────────────┐  ┌──────────────┐
   │ I've used    │  │ High         │  │ Finance      │
   │ this         │  │ cardinality  │  │              │
   └──────────────┘  └──────────────┘  └──────────────┘
```
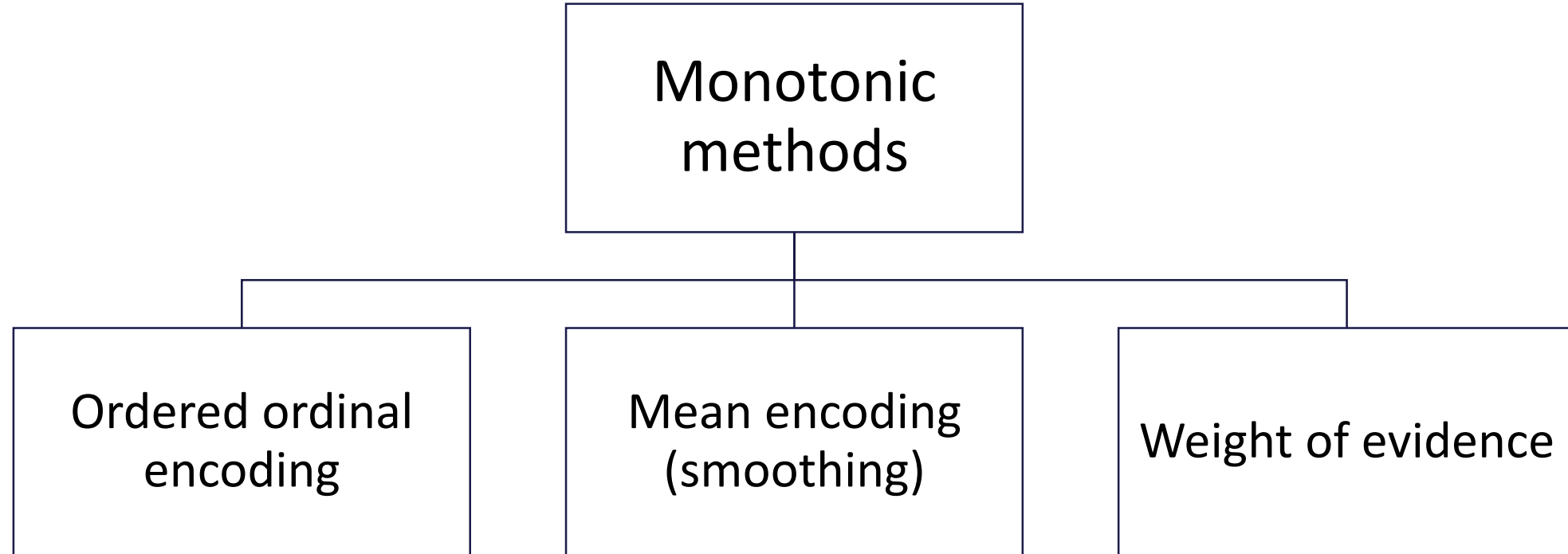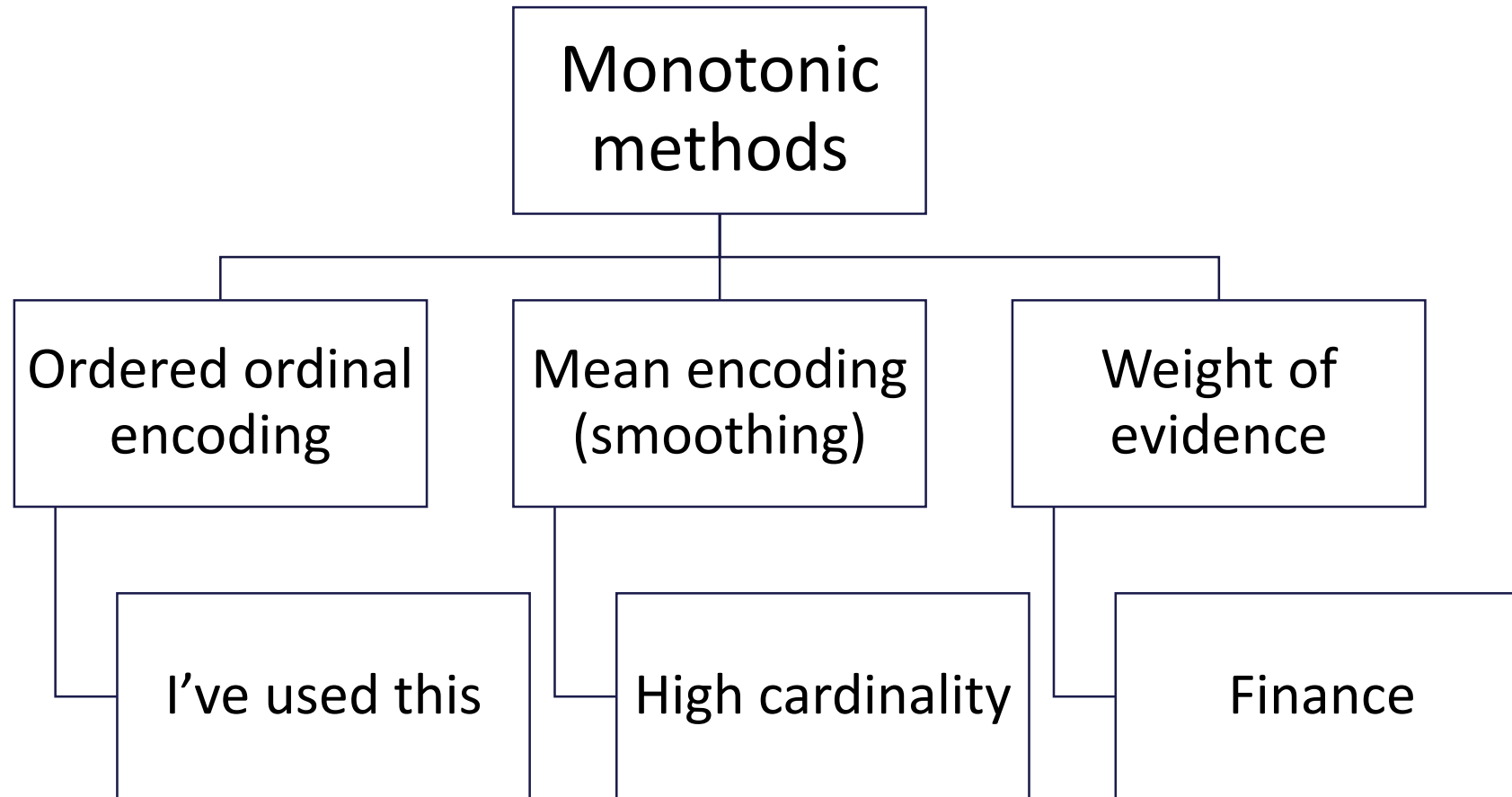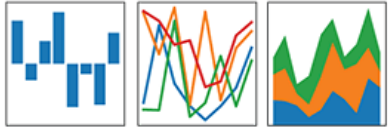
Monotonic encoding in Python

pandas

$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$

Feature-Engine

🏠 Category Encoders

Types of target

Binary	Continuous		Binary	Continuous		Binary

Ordered ordinal encoding		Mean encoding (smoothing)		WoE

Multi-class targets are not supported by these methods.

Content

- Accompanying Jupyter notebook
  - Implementation in pandas
  - Implementation in Feature-engine
  - Implementation in Category encoders

THANK YOU

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