

# Data Science Practices

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# Concepts

## Definitions

### *Machine Learning*

Constructs algorithms that can learn from data.

### *Statistical Learning*

A branch of applied statistics that emerged in response to machine learning. It emphasizes statistical models and assessment of uncertainty.

### *Data Science*

The extraction of knowledge from data that leverages ideas from mathematics statistics machine learning computer science engineering...

## Data Science Practices



## Practice Descriptions

### *Acquire*

The collection, refinement, schema and preparation of data.

### *Desktop*

Tools for visualization, exploration, data access and notebooks.

### *Insight*

Theorize, basic statistics, ontology for choicing the right analysis.

### *Describe*

Oversight with reports, profiles, clustering, dimensions and metadata.

### *Pattern*

Discovers underlying influences with regression and model generation

### *Predict*

Classifies and structures relationships to determine future probelistic outcomes.

### *Advise*

Promotes decisions using optimization, simulation, reinforement and feedback.

### *Prove*

Diagnostics, benchmarks and protects data for integrity and reproduction.

### *Process*

Streams, transforms and archives data with deployed systems.

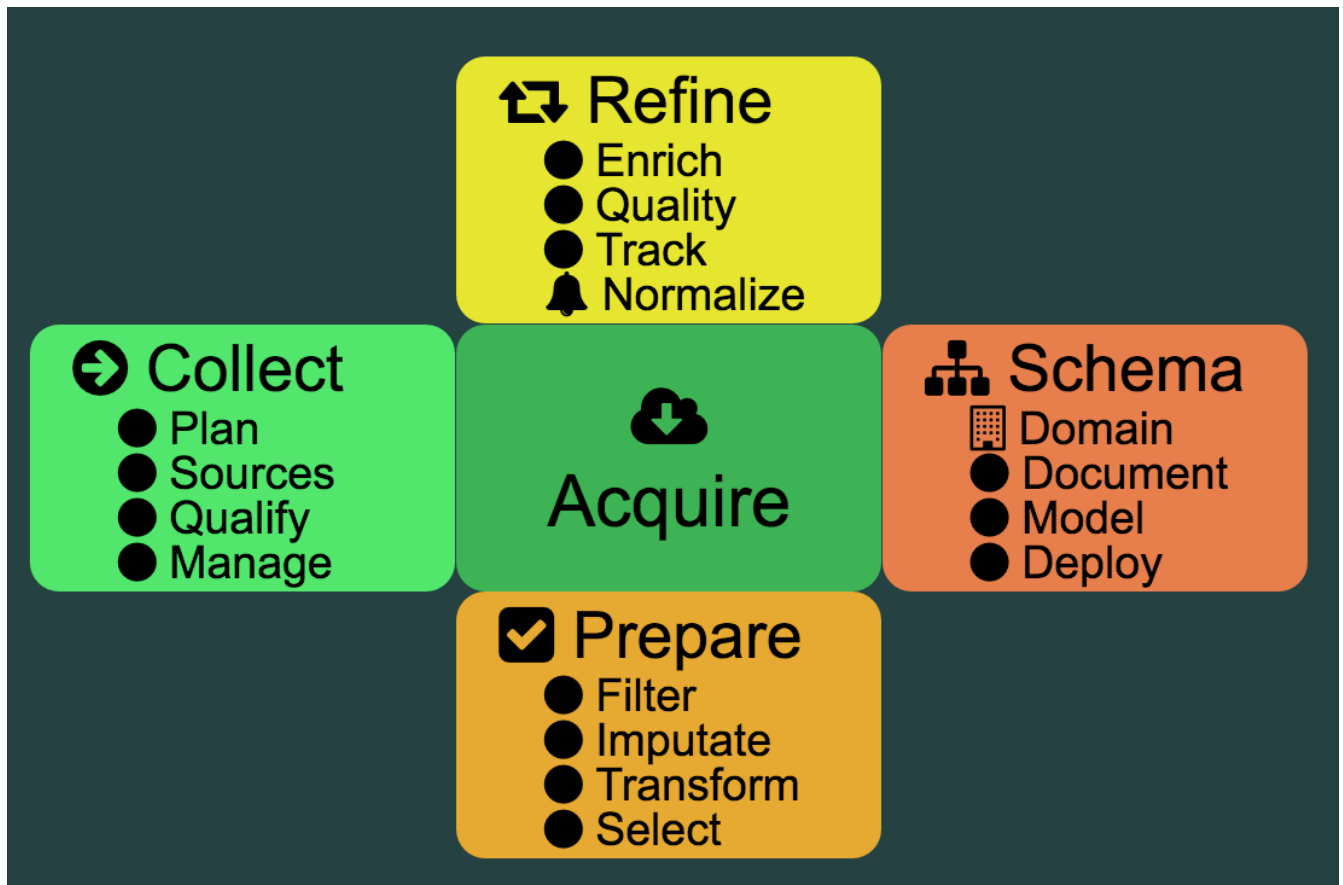
### *Explain*

Measures assets and articulates decisions with teaching and publishing.

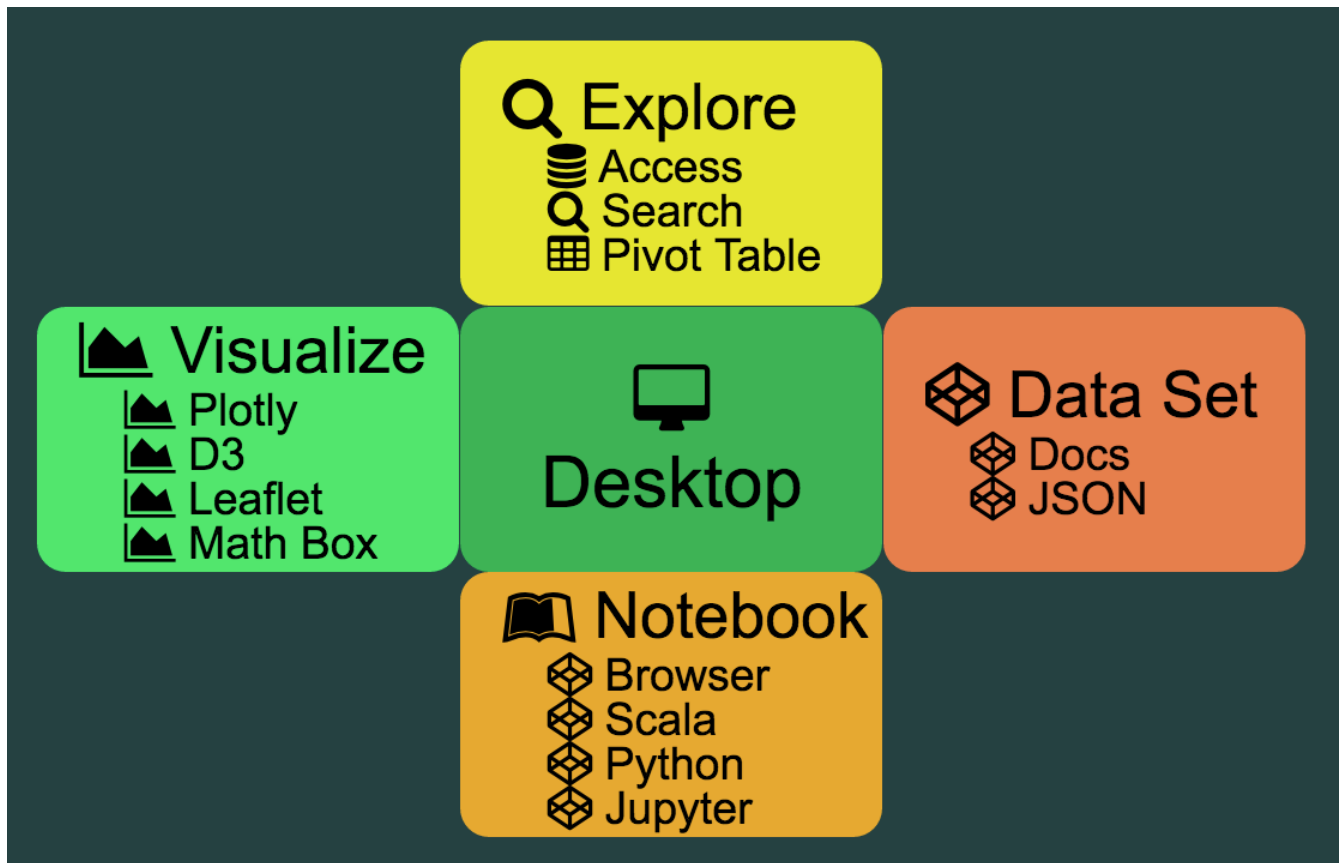
# Practices In Too Much Detail



# Acquire

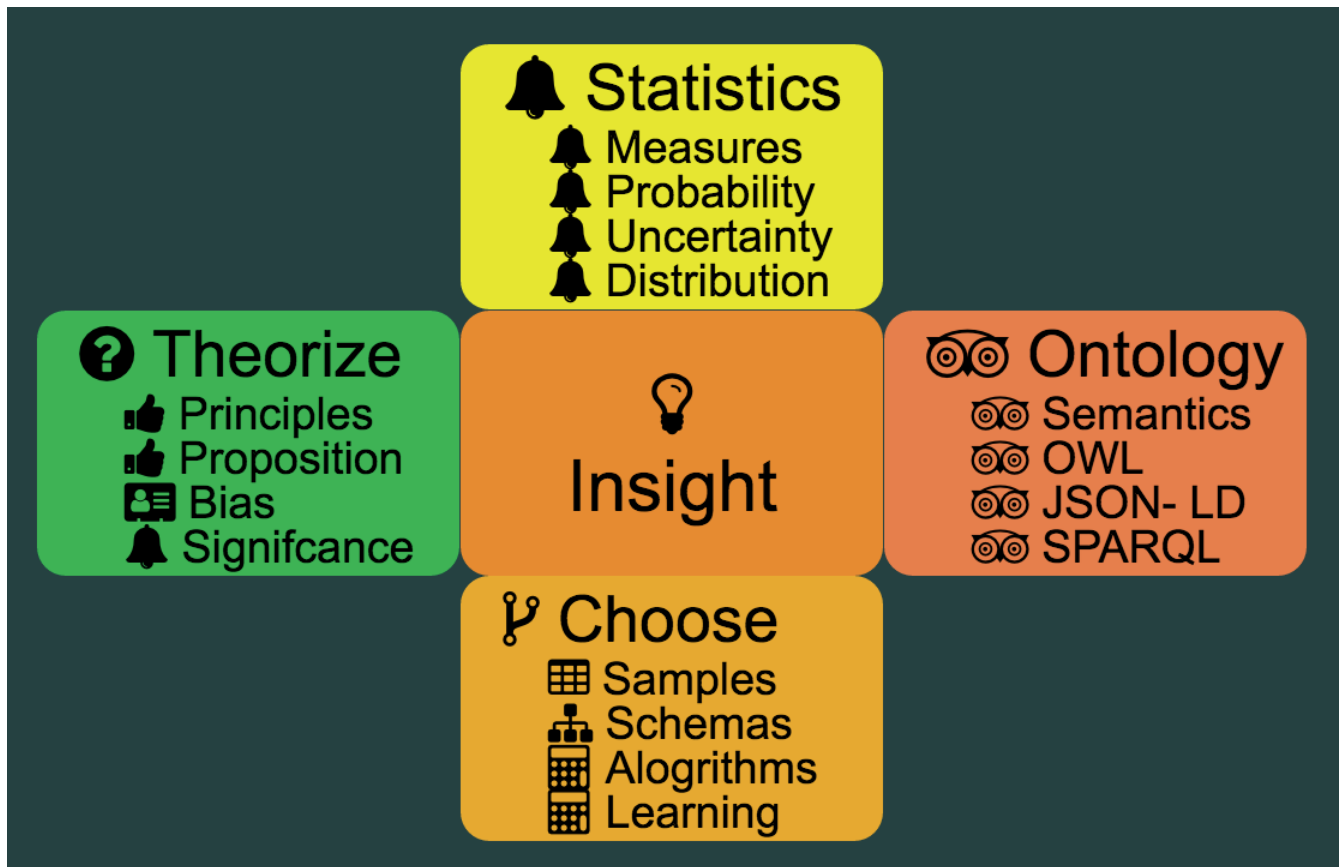


# Desktop

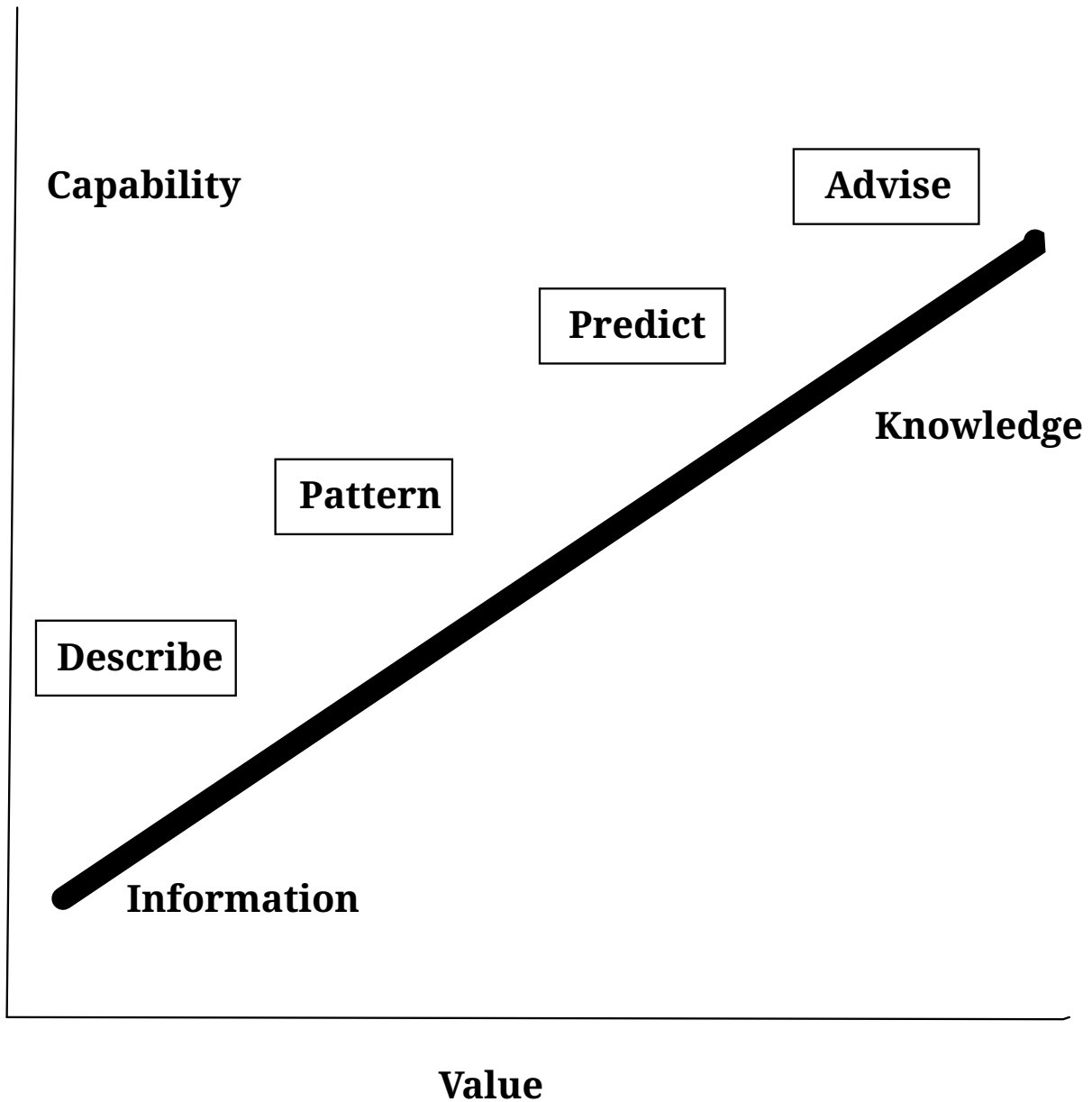




# 💡 Insight



# The Four Analytical Data Science Practices



## *Describe*

What happened and why?

## *Pattern*

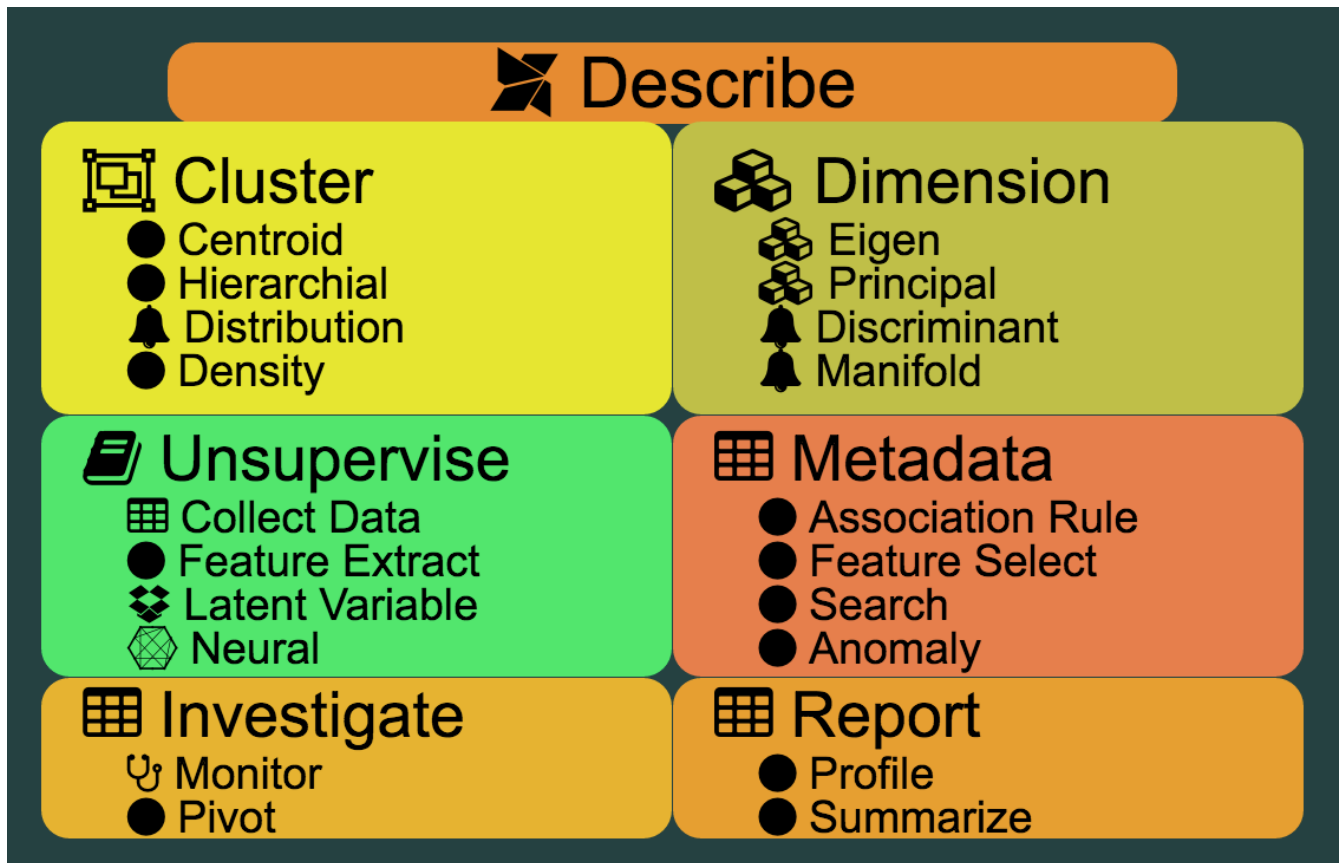
What influences made it happen?

## *Predict*

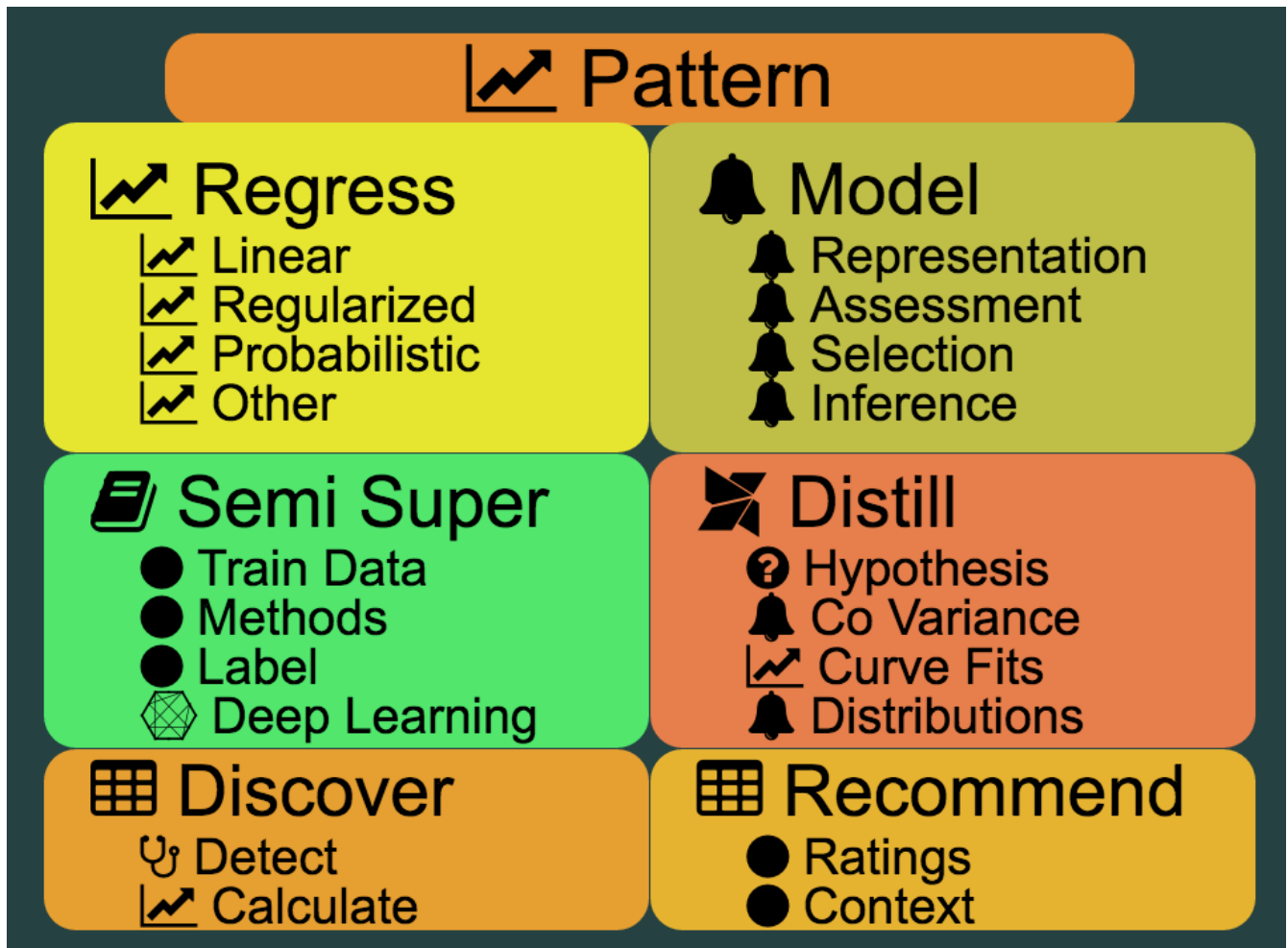
What is likely to happen?

## *Advise*

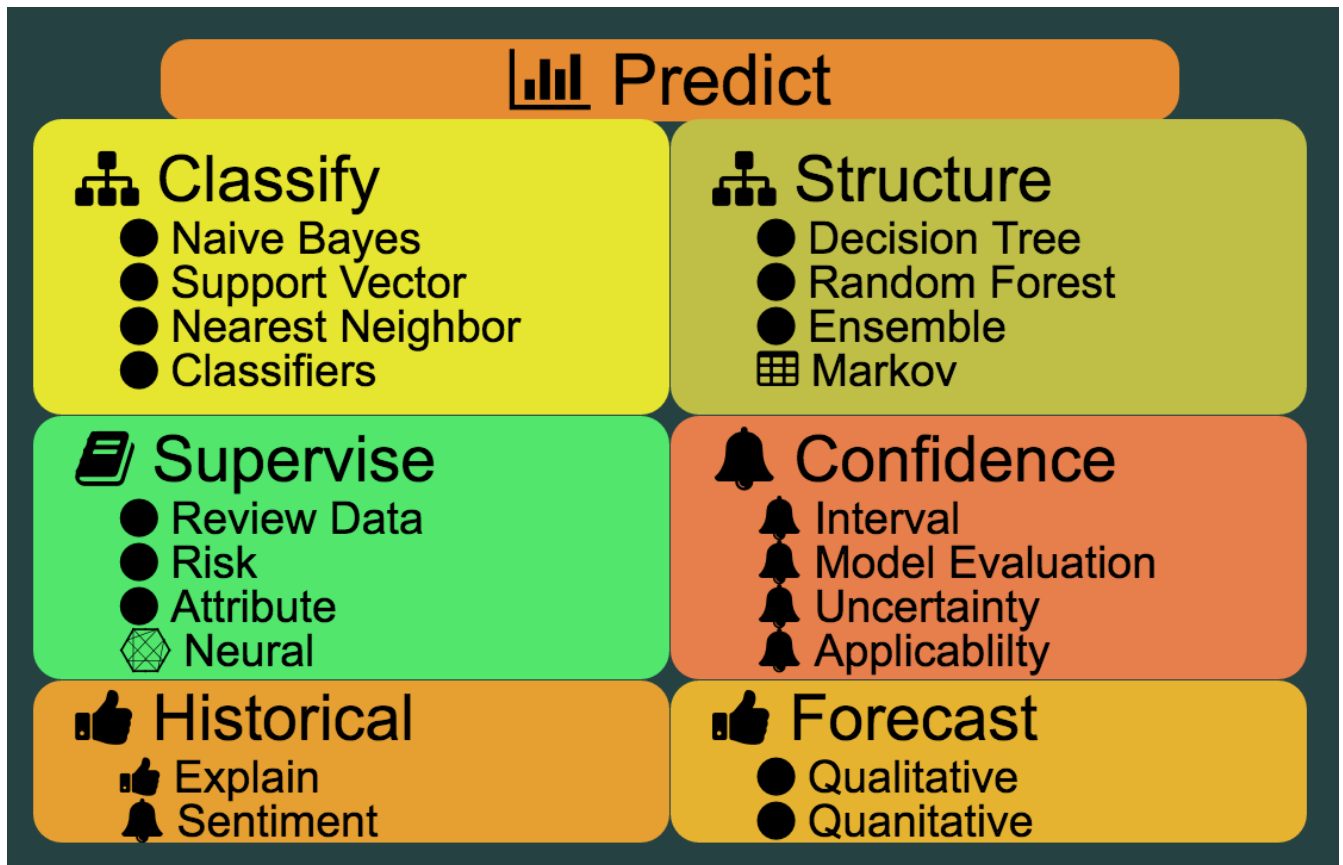
What is the best course of action?



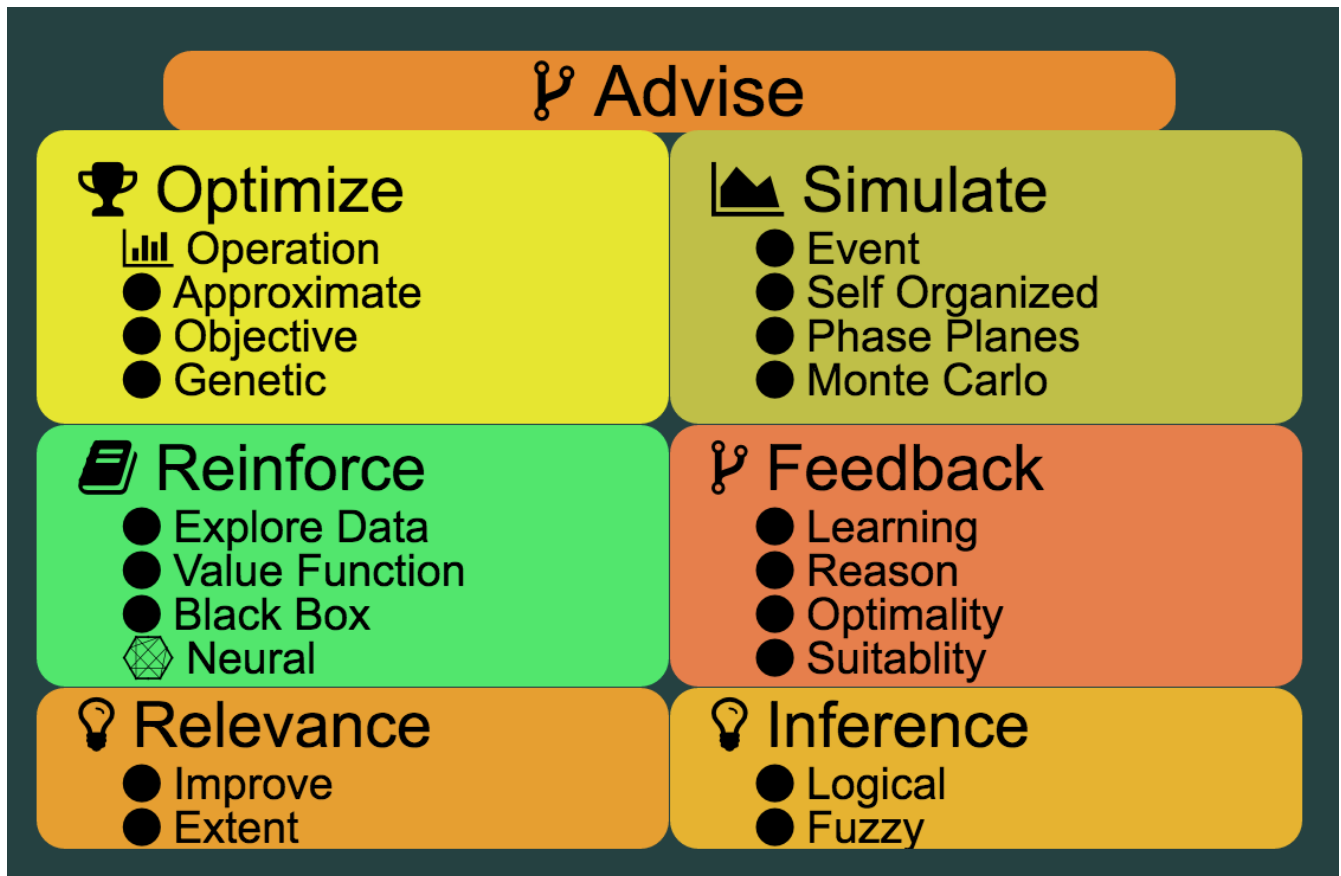
## Pattern



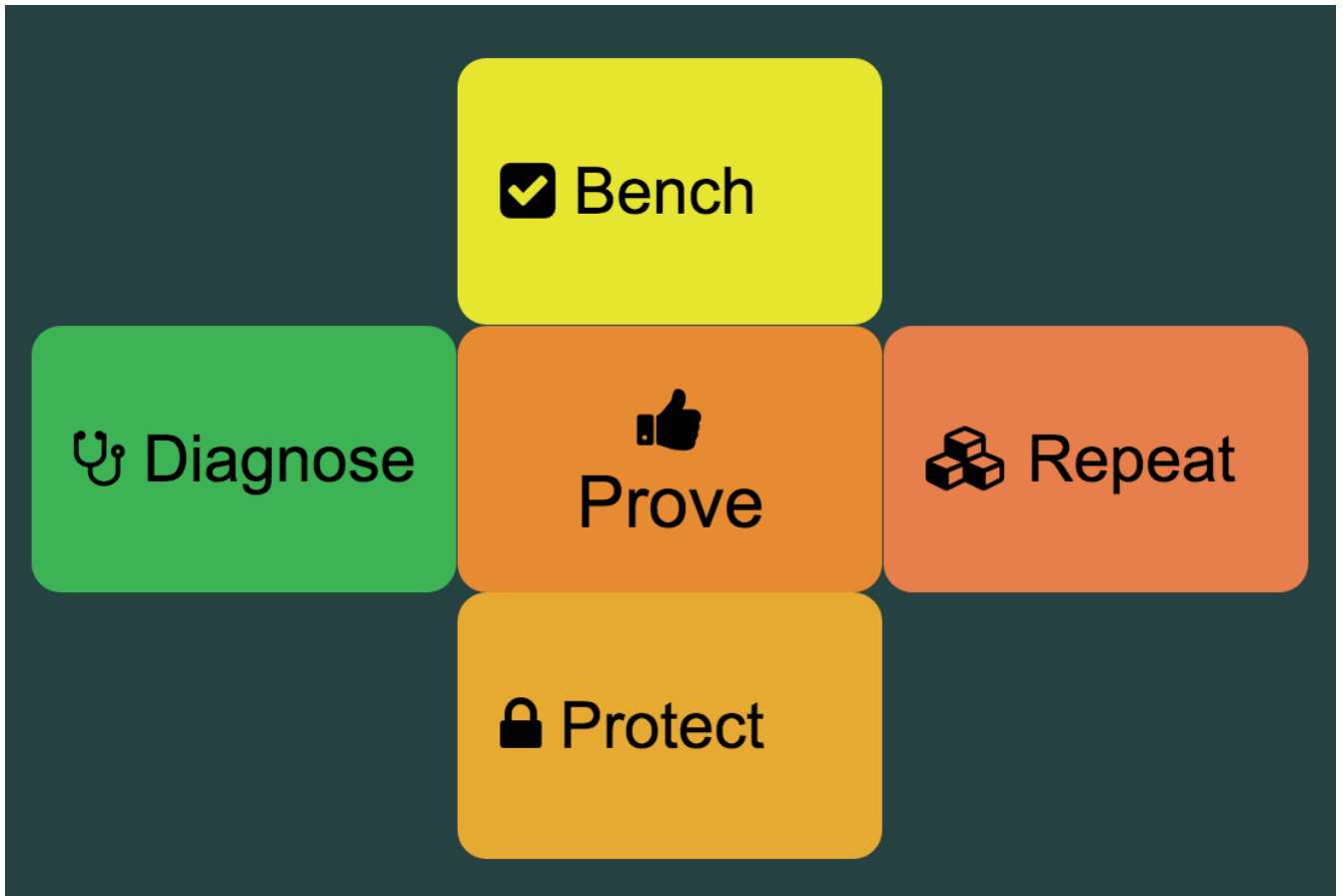
# Predict



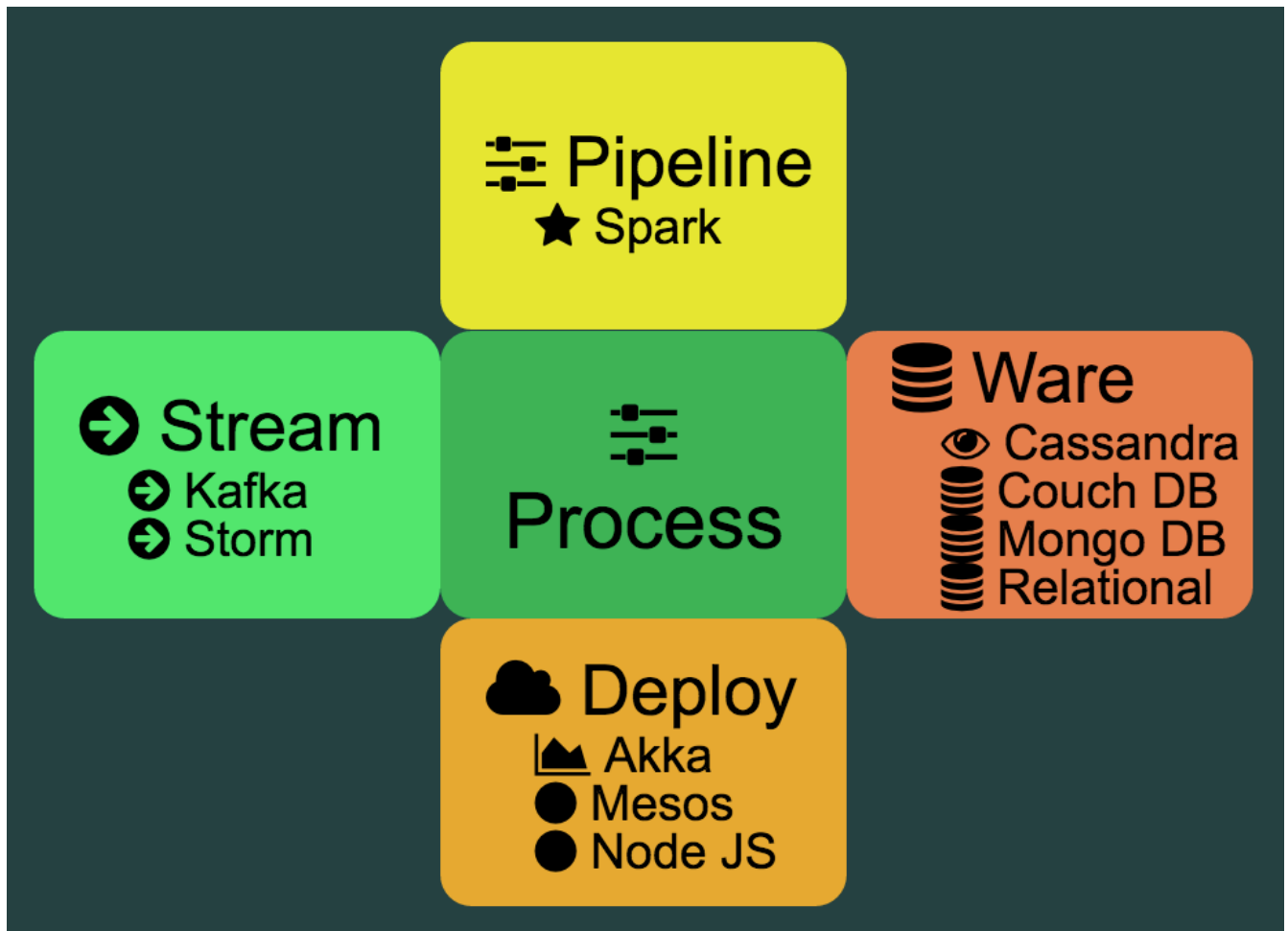
# 🔗 Advise



## Prove



## ≡ Process





# Explain

