

Basic Model for Analytics Systems

This article introduces a basic model for designing analytics systems on an abstract level.

Window and Module

We often inspect the distribution of data points over time. For example, order creation and user login are common data points. When some event happens, it leaves a data point in the sight of analytics.

When we ask how many orders were created in a specific day, we consider the day as a module which contains data points. When we ask how the order-per-day quantity were fluctuating over a specific month, we consider the month as a window which contains modules.

Sensor

A sensor is a way to collect a data point out of a raw business event. For example, effective order quantity and sales income are 2 different sensors. One collects static number 1 out of each effective order while the other collects the 'order.totalAmount' information out of it.

Stem

When we ask how many orders were created in a specific day, we are combining the module 'day 2023-01-01' and the sensor 'quantity of orders'. This combination is called a stem.

A window is spanned by a series of stems.

Conclusion

Now we have defined the collection of data and the presentation of summarized information. Issues remain for scenarios like state change, and they should be left for individual implementations.