SOFTWARE REQUIREMENT ENGINEERING

LECTURE NO: 11

BY: NAZISH NOUMAN

Playing by the Rules

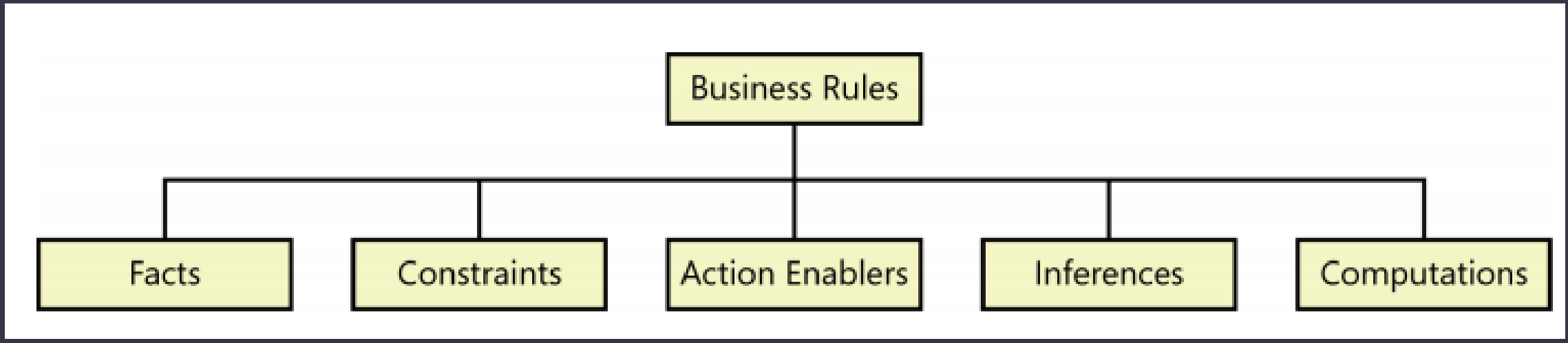
Business Rules

The Business Rules Group (2012) provides definitions for business rules from the perspectives of both the business and its information systems:

- From the business perspective: "A business rule is guidance that there is an obligation concerning conduct, action, practice, or procedure within a particular activity or sphere." (There ought to be an explicit motivation for the rule, as well as enforcement methods and an understanding of what the consequences would be if the rule were broken.)

- From the information system perspective: "A business rule is a statement that defines or constrains some aspect of the business. It is intended to assert business structure or to control or influence the behavior of the business.

Business Rules Taxonomy



Facts

Facts are simply statements that are true about the business at a specified point in time. A fact describes associations or relationships between important business terms. Facts about data entities that are important to the system might appear in data models.

Examples of facts include the following:

- Every chemical container has a unique bar code identifir.
- Every order has a shipping charge.
- Sales tax is not computed on shipping charges.
- Nonrefundable airline tickets incur a fee when the purchaser changes the itinerary.
- Books taller than 16 inches are shelved in the library's Oversize section.

Constraints

A constraint is a statement that restricts the actions that the system or its users are allowed to perform.

Action enablers

A rule that triggers some activity if specific conditions are true is an *action enabler*.

A statement in the form “If <some condition is true or some event takes place>, then <something happens>” is a clue that someone might be describing an action enabler

Example: If the expiration date for a chemical container has been reached, then notify the person who currently possesses that container

Inferences

Sometimes called *inferred knowledge* or a *derived fact*, an *inference* creates a new fact from other facts. Inferences are often written in the "if/then" pattern also found in action-enabling business rules, but the "then" clause of an inference simply provides a piece of knowledge, not an action to be taken.

Some examples of inferences are:

- If a payment is not received within 30 calendar days after it is due, then the account is delinquent.

- If the vendor cannot ship an ordered item within five days of receiving the order, then the item is considered back-ordered.

Documenting business rules

TABLE 9-4 Some sample business rules catalog entries

ID	Rule definition	Type of rule	Static or dynamic	Source
ORDER-5	If the customer ordered a book by an author who has written multiple books, then offer the author's other books to the customer before completing the order.	Action enabler	Static	Marketing policy XX
ACCESS-8	All website images must include alternative text to be used by electronic reading devices to meet accessibility requirements for visually impaired users.	Constraint	Static	ADA Standards for Accessible Design
DISCOUNT-13	A discount is calculated based on the size of the current order, as defined in Table BR-060.	Computation	Dynamic	Corporate pricing policy XX

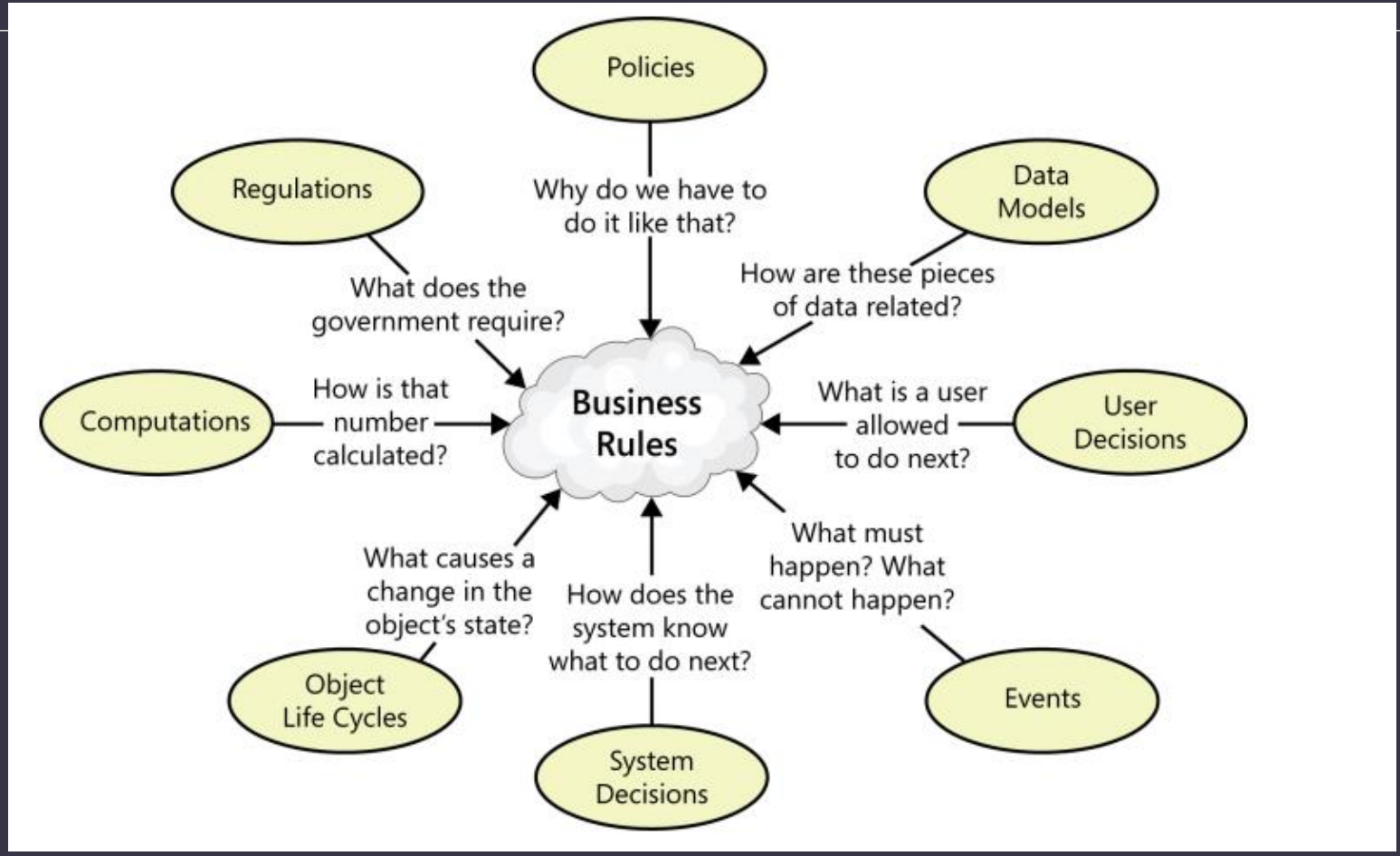
Computations

The fifth class of business rules defies ***Computations*** that transform existing data into new data by using specific mathematical formulas or algorithms. Many computations follow rules that are external to the enterprise, such as income tax withholding formulas.

For Example:

The total price for an order is the sum of the price of the items ordered, less any volume discounts, plus state and county sales taxes for the location to which the order is being shipped, plus the shipping charge, plus an optional insurance charge.

Discovering business rules by asking questions from different perspectives



Business Rules and Requirements

After identifying and documenting business rules, determine which ones must be implemented in the software.

Business rules and their corresponding functional requirements sometimes look a lot alike. However, the rules are external statements of policy that must be enforced in software, thereby driving system functionality.

Business Rules and Requirements Example

Rule #1 (action enabler): "If the expiration date for a chemical container has been reached, then notify the person who currently possesses that container."

Rule #1 serves as the origin for a system feature called "Notify chemical owner of expiration."

Expired.Notify.Before *If the status of a chemical container that has an expiration date is not Disposed, the system shall notify the container's current owner one week before the date the container expires.*

Expired.Notify.Date *If the status of a chemical container that has an expiration date is not Disposed, the system shall notify the container's current owner on the date the container expires.*

Expired.Notify.After *If the status of a chemical container that has an expiration date is not Disposed, the system shall notify the container's current owner one week after the date the container expires.*