

Business rules or "game by the rules"



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Business Rules

Business rules — one of the main sources of functional requirements for software, they determine the capabilities that the system must have for the rules implementation.

! Karl Wieggers refers BR to **non-functional requirements**



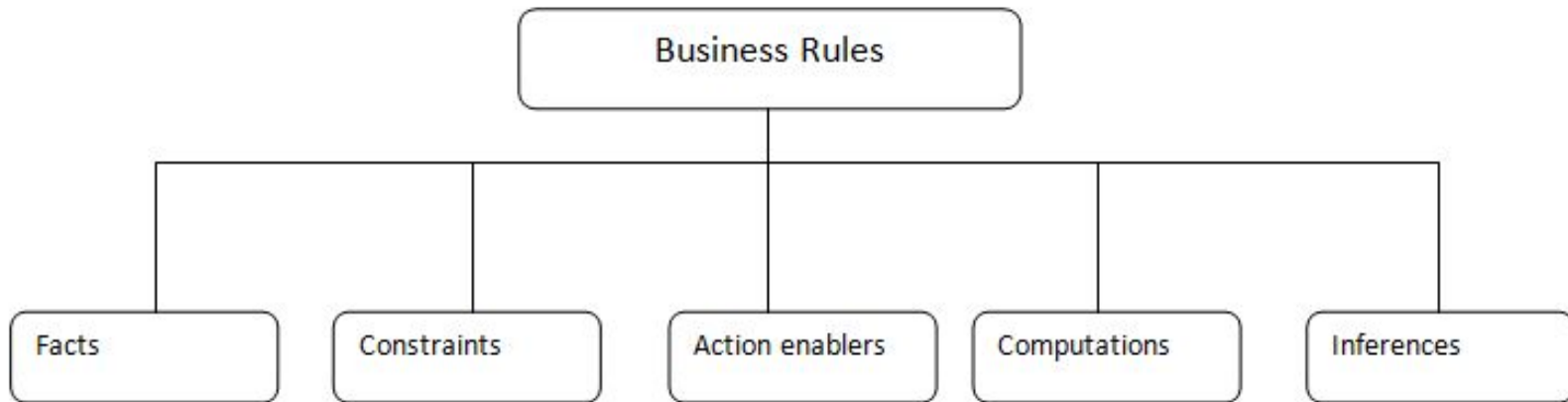
What is BR?

Business rule — defines or limits any aspects of the business;

Must — protect or control, or influence to operations of business structure



Taxonomy





Facts

Facts — the right statements about business.

Facts are also called invariants - invariable truths about the essence of data and their attributes. Business rules in many cases can refer to certain facts, but usually it is not translate directly into functional software requirements.

Examples:

- Each computer has a unique inventory number;
- Pay each order shipping;
- from the cost of delivery, sales tax is not taken;
- Record includes coordinates of an event;
- Delivery time windows are 15 minutes, beginning on each quarter hour.



Constraints

Constraints — determine what operations the system and its users can perform.

Some constraints in BR:

must, can not, can not, only, etc.

Examples:

- a loan agreement for a person under 18 years old must be signed by one of his parents or a legal guardian;
- a regular visitor of the library can postpone for himself up to 10 books;
- commercial flight crews must rest every 24 hours for at least 8 hours;
- Deliveries must be completed between 10:00am and 2:00pm local time.
- All meals in a single order must be paid for using the same payment method.



Action Enablers

The rule, under certain conditions leading to the implementation of any action, is called **action enabler**.

The rule can control some software functions, through which the application implements the desired behavior model when certain conditions are met.

The key rule structure «**if** < *some condition is true or a certain event has occurred* >, **than** < *something will happen (action)*»

Примеры:

- *If a record is outdated, it is moved to archive;*
- *if the client ordered the book of the author who wrote several books, the client should be offered other books by this author before accepting the order;*



Computations

Computers perform calculations, and therefore one of the classes of business rules defines **computations** performed using mathematical formulas and algorithms.

Примеры:

- the unit price is reduced by 10% when ordering from 6 to 10 units, by 20% - when ordering from 11 to 20 units and by 30% - when ordering more than 20 units;
- the total value of the order is calculated as the sum of the values of all ordered goods, minus the discounts on the amount, plus state and local taxes in the district where the goods will be delivered, plus the cost of delivery and plus an optional insurance fee.



Inferences

Inferences establishes new realities based on the certainty of certain conditions.

Inferences creates a new fact based on other **facts** or **computations**.

Inferences are often written in the "if-then" format, as **action enabler**; nevertheless, the section "then" of inference includes a fact or an assumption, and not an action.

Examples:

- if the payment is not received within 30 calendar days from the date of sending the invoice, the account is overdue;
- if the supplier can not deliver the ordered goods within five days of receipt of the order, the order is unfulfilled;



Template



Business Rules Catalog¶

Instructions:¶

1. → Use the following template for each business rule. ¶
2. → Capture all business rules in a single doc file. ¶

▪ 1.1 → *Business Rule Name*¶

Identifier: BR##¶

▪ Description:¶

Detailed description of the rule. Typically written in structured English or pseudo code. Consider using a flowchart or UML activity diagram to depict procedural logic.¶

Example:¶

Optional section. Sometimes a business rule is easier to understand when one or more examples are provided.¶

Related Rules:¶

Optional section.¶

List other business rules related to this one. Word Tip: If you mark each business rule with a heading type (e.g. Heading 1, Heading 2, ...), you can then add an automatic link to the rule by inserting a cross-reference (Insert menu, Cross-reference item, then insert a heading). E.g., Instructions:¶

3. → Use the following template for each business rule. ¶
4. → Capture all business rules in a single doc file. ¶

Business Rule Name.¶

Reference(s):¶

Applicable references, such as explanatory documents (printed or electronic), pertinent to this business rule.¶



Example

Business Rules Catalog

Facts

1 Record includes time of an event

Identifier: Fact

Description: Each record, which is registered, contains information about the time, when the event happened.

Example: “I lost my cell phone on April, 30th approximately at 10 p.m.”

Related Rules: 1.2 Record includes coordinates of an event

2 Record includes coordinates of an event



Laboratory work 1

- *For each BR class, use a separate template:*

- **facts** (5 rules) use template 1 (facts);
- **constraints** (3-5 rules) use template 2 (constraints);
- **action enabler** (3-5 rules) use template 3 (action enabler);
- **computations** (1-3 rules) use template 4 (computations);
- **inferences** (3-5 rules) use template 5 (inferences).

*You create 5 templates named as BR class
-some business rules will be displayed in vision*