Business Rules

# Recap:

1. phases of a project

* Plan: Project plan
* Analyze: Information gathering, Requirements
* Design: Prototype
* Implementation: Final products

***Types of phases?***

***Waterfall, Agile, prototyping, throw away prototyping***

# The Main Points to Remember

## Business rules are lists of statements that tell you whether you **may or may not** do something or that give you the criteria and conditions for making a decision.

## Business rules do not tell you how to build the system.

# Business Rule Rules

## Atomic – cannot be broken down any further without losing information

## Precise- have only one, obvious, interpretation

## Declarative – statement of policy

## Compact – typically, a single short sentence

## Consistent- together provide a unified and coherent description

## Distinct - Not redundant

## Compatibile - use the same terms as the rest of the business model; business oriented

# Types of Business Rules

## Structural Assertion

## Action Assertion

## Derivation

# Structural Assertion

## A defined concept or a statement of a fact that expresses some aspect of the structure of an enterprise

### **Term:** A word or phrase that has specific meaning for an enterprise; must be defined carefully and concisely

#### Examples: “course”, “section”, “rental car”, “passenger”

### **Fact:** An association between two or more terms. A fact is documented as a simple declarative statement that relates terms

### “A course is a module of instruction in a particular subject area.”

### Associates two terms: module of instruction and subject area

## “A customer may request a model of car from a rental branch on a particular date”.

### A definition of model rental request, associates the four underlined terms. Three of these terms are business-specific terms that would need to be defined individually (date is a common term).

# Action assertion

## A statement of a constraint or condition that limits or controls the actions of the enterprise

## Examples

### "A car must have a registration number.“

### "A car cannot be handed over to the customer unless a provisional charge has been accepted against the customer's credit card."

# Derivation

## A statement of knowledge that is derived from other knowledge in the business.

## A **derived fact** is created by an inference or a mathematical calculation from terms, facts, other derivations, or even action assertions.

## Example

### The 'total cost' of the Rental is **calculated** from the sum of its 'insurance amount,' 'rental amount,' and 'late charge.'

# Simple Constraints

## No permissions – “can” or “may”

## Avoid padding – extra words that provide no benefit to the rule

## Avoid “or” – use list and be explicit

## Avoid “and” – make multiple statements

## Avoid complex rules – Use/define business terms

## Avoid starting with “if” – Not explicit

## Avoid plural forms – avoid plurals

## Use “Each” and “Every” to improve clarity

# Examples – what type of Business Rules are each of these?

## Tenured professors may administer student grades. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Teaching assistants who have been granted authority by a tenured professor may administer student grades. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Table to convert between numeric grades and letter grades. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## All master’s degree programs must include the development of a thesis. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## A car with accumulated mileage greater than 5000 since its last service must be scheduled for service. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## A car must have a registration number. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## A car cannot be handed over to the customer unless a provisional charge has been accepted against the customer's credit card. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## A customer may request a model of car from a rental branch on a date. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_