



# Executable Business Rules

## A Step by Step Guide

This Quick Start Guide demonstrates how to model Business Rules using Enterprise Architect. A car rental example illustrates the process of creating Executable Business Rules, introducing key concepts such as the Business Domain Model and Rule Composer. The modeling process develops a set of transparent and robust rules that help to achieve real-world business objectives.



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## Introduction

This Quick Start Guide demonstrates how Enterprise Architect can model Business Rules and generate executable code. The modeling process defines a business vocabulary that provides a better shared understanding of the decision making process.

## What You Will Learn

After reading this document you will know how to:

- Use Enterprise Architect to Model Business Rules.
- Create a Business Domain Model that defines your business vocabulary.
- Create a Rule Model that defines the Business Rules related to a specific rule task.
- Create a Rule Flow Model that determines the sequence in which rules are to be processed.
- Use Enterprise Architect's Rule Composer to model Business Rules at a logical level.
- Validate Rules within the Rule Composer prior to code generation.
- Generate source code from a set of Business Rules modeled in Enterprise Architect.

## What You Will Gain

This report will help you to:

- Take advantage of the Business Rules capability within Enterprise Architect.
- Capture and utilize valuable business logic.
- Convert current Business Rules into executable code improving traceability and productivity.
- Examine your decision making process to quickly identify omissions, contradictions and errors.
- Leverage existing intellectual property to achieve business objectives.
- Produce real-world systems based on a coherent set of validated Business Rules.

## What Should You know (Prerequisites)

This Quick Start Guide has been written under the following assumptions:

- You have a copy of Enterprise Architect installed.  
(*Ultimate* edition or *Business and Software Engineering* edition)
- You have a basic understanding of UML.
- You can create a class diagram, activity flow diagram, decision table and a rule flow diagram.

For more information on Enterprise Architect editions go to:

<http://www.sparxsystems.com/products/ea/editions.html>



## Business Rules Modeling Roadmap

The car rental system used in this Quick Start Guide ascertains who is eligible to rent a car, calculates rental costs, records penalties associated with a poor driving history and determines the total amount payable. All of these system requirements form part of a successful Car Rental Company. A set of Business Rules is needed govern the business and to ensure successful operation.

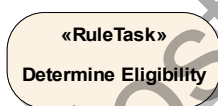
The process of Business Rules Modeling will help identify gaps, improve the decision making process and facilitate communication resulting in the development of accurate and robust rules. The end result of this process is the creation of executable code that can encapsulate the intellectual property associated with a successful business. The completed example described in this Quick Start Guide can be found in Enterprise Architect's Example Model. The roadmap described below could be applied to the development of any set of Business Rules.

The Business Rules Modeling Roadmap includes the following basic steps:

1. [Create a Rule model](#) to define Business Rules in natural language.
2. [Create a Business Domain model](#) to provide the business vocabulary for defining Business Rules.
3. [Create a Rule Flow model](#) to group the rules for a specific task under a Rule Task, and outline the order in which the Business Rules are executed.
4. Model the rules in the [Rule Composer](#), which enables the rules to be transformed into a logical level of detail.
5. [Validate](#) the rules within the Rule Composer.
6. [Generate code](#) for the Business Rules using Enterprise Architect's general code generation methods.

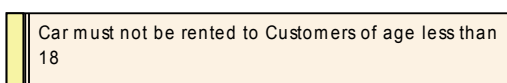
## Important Terms you Need to Know

**Rule Task element:** A stereotyped UML Action that models Business Rules for a specific task.



**Business Rule:** A statement that defines or constrains an aspect of your business process and is often used to impose business structure or govern behavior. Our car rental system includes rules such as “Drivers must be aged over 18 and must have a valid license.”

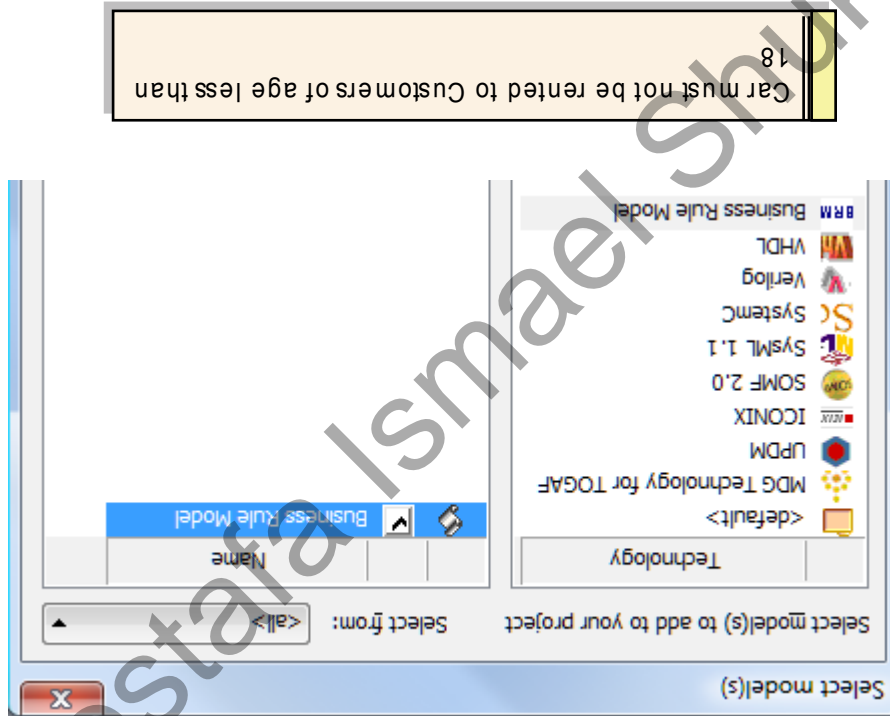
**Business Rule element:** A visual representation of your natural language Business Rules in Enterprise Architect, as shown below.





## Step 1 – Define Your Business Rules in Natural Language

1. Open a new Enterprise Architect Project.
2. Select the root node from the Project Browser and right-click the Context Menu.
3. Select "Add" followed by "Add a New Model Using Wizard".
4. In the Select Model(s) dialog box, add the Business Rule Model template from the Business Rule Model Technology as indicated below.



### Creating Your Rule Task elements

To create Rule task elements you will need to complete the following steps:

1. From the Project Browser double-click on the Business Rules diagram created by the Business Rule Model Template.
  2. From the Rule Model Toolbox, drag a Rule Task element onto the diagram View. We will use this Rule Task element to determine the eligibility of each customer who wishes to rent a car.
- Note: When modeling the Rule Flow, each Rule Task element must be moved under the