Role4All Use Case

# Introduction

This document presents Role4All through a simple example. ….

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# Context

For this example we create two documents in Excels:

|  |  |
| --- | --- |
| Figure 1: Relation between product name and price | Figure 2: Relation between product name and ip |

These documents contain different information about the same objects. We have a PC with a price (3000€) and an IP (192.168.1.1) and a FPGA with a price (42€) and an IP (172.168.1.2).

# Initialization

Before use Role4All we need to create some elements:

* The Excels meta-model in Smalltalk (simplify for this example).
* A conversion from Excel to Smalltalk.
* Role models.

## The Excels meta-model in Smalltalk

Excel is a complex tool therefore in our example we use a basic meta-model of Excel. An “Excel workbook” contains just a list of dictionary called “Excels element”.

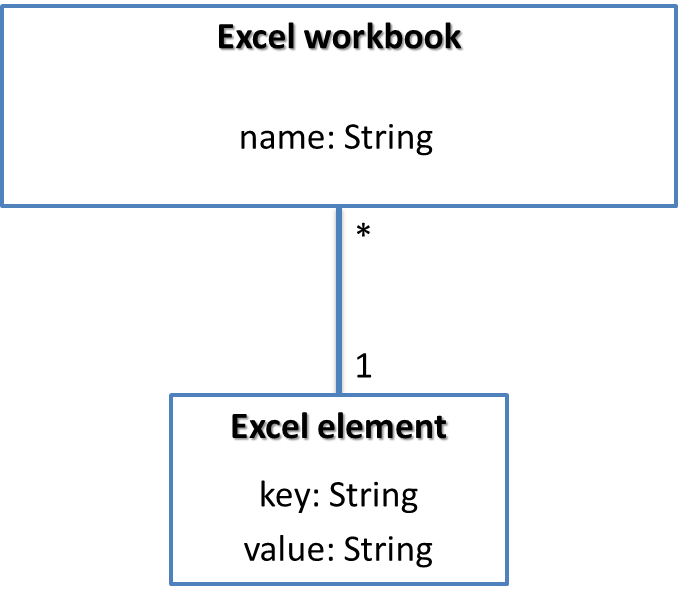


Figure 3: Simplify Excel's meta-model

Now with our Excel meta-model we can transform our Excel file to Smalltalk model.

## Conversion from Excel to Smalltalk

To convert an Excel file to Smalltalk we use two model transformations, the first one between Excel and Json and the second one between Json and Smalltalk. In this document we will not develop this transformations we focus one the result of this transformation: the Smalltalk models.



Figure 4: Model transformations between Excel and Smalltalk

Now we have two instance of Excel workbook class define in Smalltalk. Therefore we can create the role models.

## Role models definition

A Role model includes 3 elements:

* A Role type
* An adaptor
* A synchronizer

### Role type definition

In our example we create 2 role types: RoleFPGA and RolePC. We will create 2 instances of each Role type named: roleFPGA0, roleFPGA1, rolePC0 and rolePC1. This instances will be linked with an excel element.

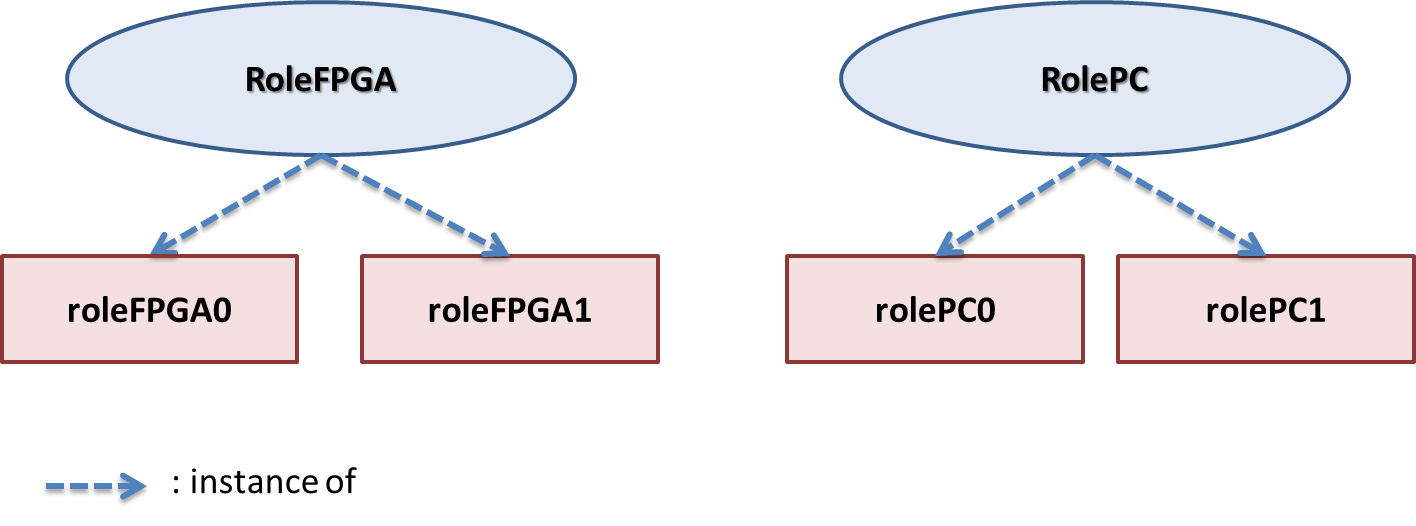


Figure 5: Role type definition