

# SERIOUS PLAY: PRE-CONCEPTUAL SCHEMAS IN ACTION

Juan Sebastián Zapata-Tamayo  
Universidad Nacional de Colombia, Colombia  
jzapatat@unal.edu.co

Carlos Mario Zapata-Jaramillo  
Universidad Nacional de Colombia, Colombia  
cmzapata@unal.edu.co

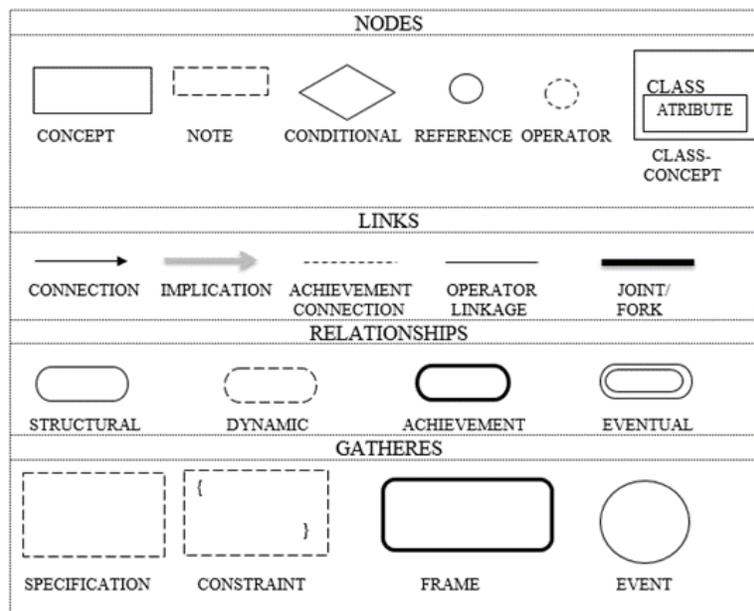
## ABSTRACT

*Pre-conceptual schemas are knowledge representations of any domain. Since such schemas are close to the natural language of the stakeholders and translatable to source code, we propose in this serious play an experience for creating a pre-conceptual schema in a 90-minute classroom and then generating the alpha version of a software application based on such schema.*

## INTRODUCTION

Zapata *et al.* (2006) create the pre-conceptual schemas as modeling tools for representing knowledge related to any domain. In fact, pre-conceptual schemas can be used for gathering information related to such domains in order to be understood and then translated into software applications. Such information comes from the stakeholder discourse and can be represented by using the basic elements depicted in Exhibit 1.

### EXHIBIT 1 BASIC SYMBOLS OF PRE-CONCEPTUAL SCHEMAS (SOURCE: ADAPTED FROM ZAPATA, 2012)



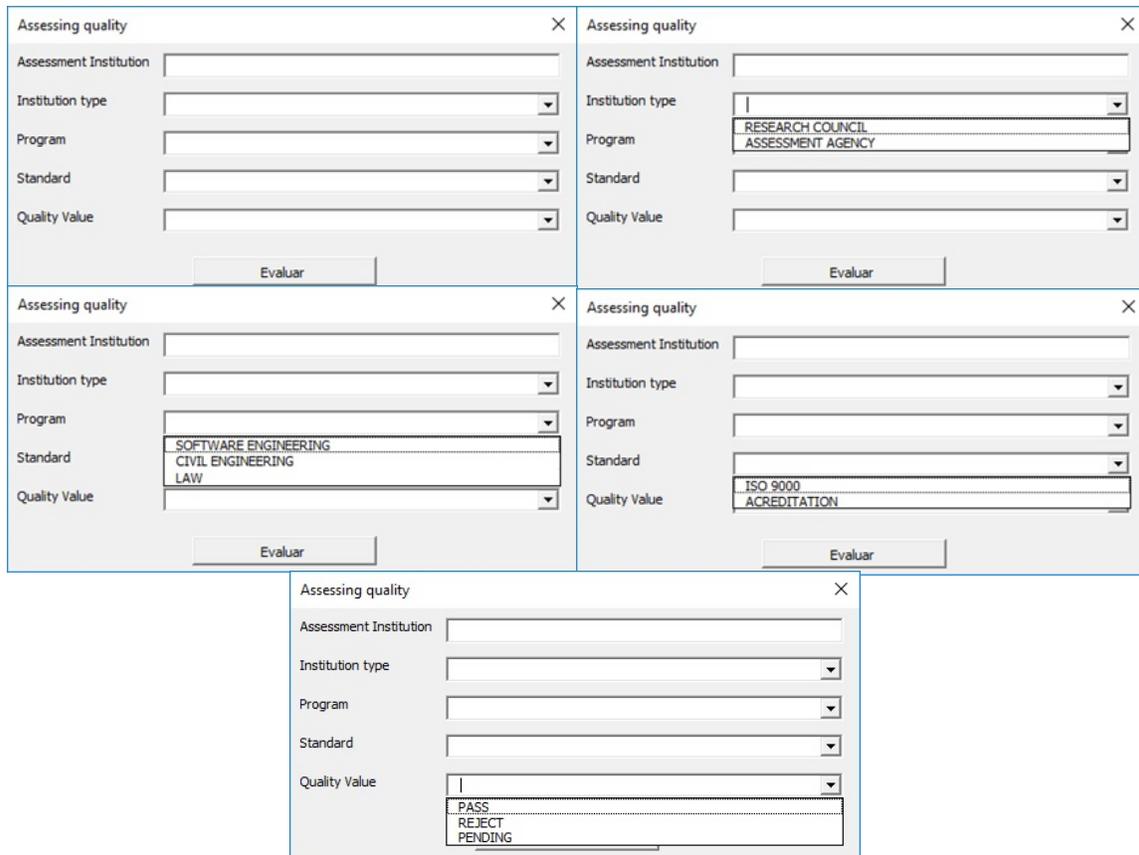
Some descriptions of such elements are:

- Concepts: nouns and noun phrases
- Structural relationships: verbs “is” and “has”
- Dynamic relationships: activity verbs
- Connections: arrows for linking concepts to relationships
- Implications: arrows for expressing cause-and-effect relationships



### EXHIBIT 3

## GRAPHICAL USER INTERFACE BASED ON EXHIBIT 2 (SOURCE: THE AUTHORS)



### REFERENCES

- Ortiz, H. J, Zapata, C. M., & González, G. (2014). La gestión de programas académicos desde la perspectiva de la gestión del conocimiento apoyada con esquemas preconceptuales. *Revista Ingenierías Universidad de Medellín*, 13(25), 191–205.
- Zapata C. M., Gelbukh, A., & Arango, F. (2006). Pre-conceptual schemas: a conceptual-graph-like knowledge representation for requirements elicitation. *Lecture notes in computer sciences*, 4293, 17–27.
- Zapata C. M. (2007). *Definición de un Esquema Preconceptual para la Obtención Automática de Esquemas Conceptuales de UML*. Ph.D. Thesis. Medellín: Universidad Nacional de Colombia.
- Zapata C. M. (2012). *UNC-Method revisited: elements of the new approach*. Saarbrücken: Lambert Academic Publishing.