

Abstract

Unified Modeling Language (UML) is a common modeling language that widely used to design a system. Besides having a graphical representation, UML is also easy to understand. However, UML has not an analytical techniques to discover system flaws. Therefore, it requires another modeling tool such as Petri Net. Petri Net is an executable modeling tool that highly suitable for modeling various systems. Petri Net also has a behavioral analysis technique to determine the behavior of the system. In the previous researchs, a transformation has been done for translating Sequence Diagram to Petri Net using a transformation rules.

Using test data of Badan Pelayanan Perizinan Terpadu (BPPT) procedures, the author create a java based tool that applying transformation rules for translating Sequence Diagram to Petri Net. Sequence Diagrams are obtained from the modeling of Badan Pelayanan Perizinan Terpadu (BPPT) procedures. The modeling results are exported to an XML Metadata Interchange (XMI) as the input of the created tool. The output of the tool is an eXtensible Markup Document (XML) of Petri Net. After that, Petri Net can be validated using its behavioral properties, liveness and boundedness. This research successfully combines transformation rules from the two previous researchs. However, the validation result found that most of Petri Net result does not support liveness property. In this research proposed to add a source place and a sink place as a new transformation rules that have been implemented and makes this incorporation of transformation rules became valid.

Keywords: *UML, Sequence Diagram, Coloured Petri Net, Java, XMI*