

## **Programming Tool for Markovian Finite- State Systems Performance Evaluation<sup>1</sup>**

**Aida Sayma<sup>2</sup> Hassan Abo ulnour<sup>3</sup> Waleed. Mizher<sup>4</sup>**

### **Abstract**

Finite state systems are systems with finite state space. These systems form a great proportion of practical systems such as computer systems and digital communication systems and their protocols.

The optimal design process of these systems is a principal necessity because they are wide spread and have many applications.

There are various methods to design such systems. Some of them are based on the method of stochastic Petri net (SPN) model-based performance evaluation, and that is for the Markovian finite state systems.

We introduce in this article, a programming tool which we have developed, to execute the phases of SPN model-based performance evaluation automatically, and help in the design and performance analysis of any Markovian and finite state system. In addition to that, We introduce application to our programming tool on a communication system in order to explain its use.

<sup>1</sup> For the paper in Arabic see pages (275-311).

<sup>2</sup> Master of Computer Science at Damascus University, Faculty of Information and Engineering.

<sup>3</sup> Dep. of Electronic, Faculty of Mechanical and Electrical Engineering Damascus University,

<sup>4</sup> Ass. Professor at Damascus University, Faculty of Mechanical and Electrical Engineering