Creation of hospital simulation model using DEVS

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Background:

Hospitals play an essential role in provision of healthcare services. Thus, maximizing the efficiency of both strategic and operational hospital management is an important for development of modern healthcare systems. Creation of models, that simulate hospital lifecycle is important for determining the most optimal allocation of hospital resources and minimization waiting time for various patients, thus both providing better service and customer satisfaction, and minimizing operational costs, making healthcare services more affordable.

Modeling and simulation goals:

The goal of this project is to analyze the lifecycle of the hospital in order to come up with a set of the most important features, that should be taken into account during simulation, and reduce the complexity of the model by discarding the parameters, that are less important. Then, we want to build a model using DEVS, that will focus on individual patients and services, consider certain stochastic factors, such as uncertain emergency arrivals, and pay attention to different queueing mechanisms. After conducting some simulation, we want to come up with a set of recommendations and strategies, that should maximize the efficiency of a hospital.

References: