

Simscript II.5 Tutorial

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BACKGROUND

Simulation languages are (or should be) more than extensions of general purpose programming languages designed to ease the burden of programming simulation problems. The influence of a good simulation language should be felt during the specification and model design stages of simulation as well as during computer implementation. If the "world-view" of the simulation language is well understood and if that world-view is appropriate for a given problem then the language should aid immeasurably in reducing the effort (and consequently elapsed time) in transforming model from concept to realization.

I. SIMSCRIPT II.5 World View

SIMSCRIPT is a discrete-event language. Actions are modelled in terms of events. Sequences of events describing actions of a single object (or entity) are modelled as processes. Many important relationships are described statically in terms of entities-attributes-sets. This very powerful data structuring is one of the unique features of the language. The implementation in SIMSCRIPT of the classical simulation problems such as small queueing models or job-shop simulations have been described elsewhere.

II. The Tutorial

This tutorial will highlight an area for which SIMSCRIPT is particularly well-suited, a complex network of dissimilar process - each described at an appropriate level of detail. This model has been used, with appropriate variations, for applications as wide-spread as aircraft maintenance modelling, combat system architecture modelling,

waterways network modelling and crude-oil transportation studies. This later application will be used to illustrate the powerful data structuring and model-building techniques of SIMSCRIPT.

III. SIMSCRIPT II.5 Literature

1. Fishman, G.S., Principles of Discrete-Event Simulation, Wiley, 1978.
2. Gordon, Geoffrey, Systems Simulation, Prentice-Hall, 1978. (This second edition discusses SIMSCRIPT II.5. The first edition discussed SIMSCRIPT I.5).
3. Kiviat, P.J., H.M. Markowitz, and R. Villanueva, SIMSCRIPT II.5 Programming Language, (edited by E.C. Russell), CACI, 1973.
4. Russell, E.C., Building Simulation Models with SIMSCRIPT II.5, CACI, 1979 (in process).

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