# NORSK REGNESENTRAL NORWEGIAN COMPUTING CENTER



# SIMULA®

USERS GUIDE IBM System/360

REVISED EDITION 1975

.

### © Norsk Regnesentral 1971, 1975.

Publication no. S-24-1
Norwegian Computing Center

Printed in Norway by Alstad Offset-trykk

System/360

# SIMULA

USERS GUIDE

Section: 0

Page: 1

Level: 0

Date: 5/4-1971

Originator: GB

# PREFACE

SIMULA is a general purpose programming language. Its defining documents are "The Revised Report on ALGOL 60" [1] and "SIMULA 67 Common Base Language" [2].

This manual, and the companion volume "Programmer's Guide" [3], serve as guides to the implementation on the IBM 360 series, with the "Programmer's Guide" taking care of the implementation dependent parts.

This manual, then, is a guide to the language itself. It has been written in three parts, the first consisting of fully described examples, the second giving the syntax and semantics of SIMULA, and the last consisting of sections (with further examples) on the standard system classes and text handling.

#### References

- [1] "The Revised Report on the Algorithmic Language Algol 60", CACM, Vol. 6., No. 1, 1963.
- [2] "SIMULA Common Base Language", NCC Publ. S.22, 1971
- [3] "Programmer's Guide SIMULA for 360", NCC Publ. S.23, 1971.

System/360

# SIMULA

USERS GUIDE

Section: 0

Page:

Level: 0

Date: 5/4-1971

Originator: GB

### CONTENTS

#### PREFACE

## PART 1 BASIC SIMULA

COMPILE TIME AND RUN TIME

- 1 THE HIGHEST MARK
- 2 NUMBERING A CROSSWORD PUZZLE
- 3 GEOMETRIC APPLICATIONS
- 4 SIMULATION OF A QUEUEING SITUATION

# PART 2 THE SYNTAX AND SEMANTICS OF SIMULA

- 1 METHOD OF SYNTAX SPECIFICATION
- 2 BASIC SYMBOLS AND SYNTACTIC VARIABLES
  - 2.1 LANGUAGE CHARACTER SET
  - 2.2 BASIC SYMBOLS
  - 2.3 DATA CHARACTER SET
  - 2.4 THE USE OF BLANKS
  - 2.5 COMMENT CONVENTIONS
  - 2.6 CODING SIMULA PROGRAMS
- 3 IDENTIFIERS
- 4 TYPES AND CONSTANTS
  - 4.1 TYPES
  - 4.2 CONSTANTS

System/360

SIMULA

USERS GUIDE

Section: 0

Page:

Level: 0

Date:

5/4-1971

Originator: GB

# 5 DECLARATIONS

- 5.1 TYPE DECLARATIONS
- 5.2 ARRAY DECLARATIONS
- 5.3 SWITCH DECLARATIONS
- 5.4 PROCEDURE DECLARATIONS
- 5.5 CLASS DECLARATIONS

#### 6 EXPRESSIONS

- 6.1 VARIABLES
- 6.2 FUNCTION DESIGNATORS
- 6.3 ARITHMETIC EXPRESSIONS
- 6.4 BOOLEAN EXPRESSIONS
- 6.5 CHARACTER EXPRESSIONS
- 6.6 DESIGNATIONAL EXPRESSIONS
- 6.7 OBJECT EXPRESSIONS
- 6.8 TEXT EXPRESSIONS AND TEXT VALUES

#### 7 BLOCKS AND STATEMENTS

- 7.1 BLOCKS AND COMPOUND STATEMENTS
- 7.2 STATEMENTS

#### PART 3 SYSTEM CLASSES AND TEXT HANDLING

- 1 PROGRAM STRUCTURE
- 2 CLASS SIMSET
- 3 CLASS SIMULATION
- 4 TEXT
- 5 CLASS BASICIO

APPENDIX A: HARDWARE REPRESENTATION

APPENDIX B : SYSTEM PROCEDURES

APPENDIX C : SKELETON OF THE SYSTEM CLASSES AND SYSTEM

**PROCEDURES** 

INDEX