**Shree Harini T**

# simula
## Programming

LANGUAGE PRESENTATION

TIFAC-CORE in Cybersecurity

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# contents

# Introduction

## Unfold the Story

- Simula, from history, is considered the first object-oriented programming (OOP) language ever.
- Simula was obtained from two (2) simulation programming languages, Simula I and Simula 67.
- Simula was designed and developed between 1962 and 1967 by Kristen Nygaard and Ole-Johan Dahl at the Norwegian Computing Centre (NCC) in Oslo.

# history

## 1957

Kristen Nygaard, an MS in mathematics at the University of Oslo, started writing computer simulation programs in 1957. Therefore, was seeking a better way to describe its heterogeneity.

## 1960

Nygaard needed someone with more computer programming skills than he had. Thus, he contacted Ole-Johan Dahl, also an MS in mathematics who joined him in January 1960.

## 1962

"SIMULA I" was born, a special-purpose programming language (similar to ALGOL 60) for simulating discrete event systems.
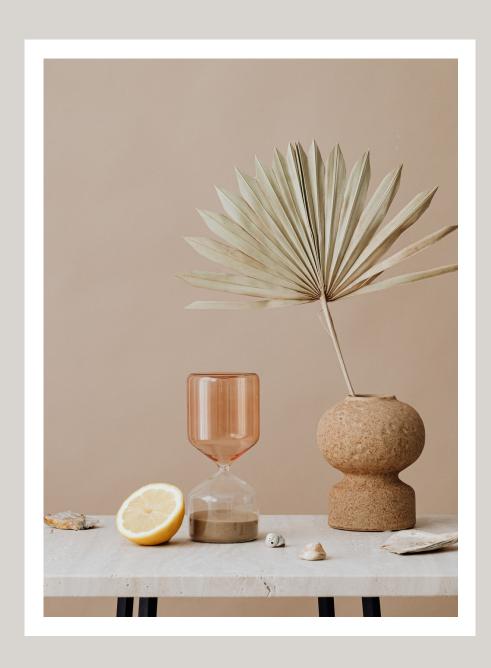
## 1965

SIMULA I was fully operational on the UNIVAC 1107 by January 1965. Dahl and Nygaard spent a lot of time teaching Simula in the following years.

## 1966

In 1966 the British computer scientist Tony Hoare introduced the concept of record class construct, which Dahl and Nygaard extended with the concept of prefixing.

## 1967

The official release date of it was on **06-05-1967**. In June 1967, a conference was held where Dahl proposed to unify the type and the class concept.

# paradigms



## Multiple Paradigms

Simula was classified into multiple paradigms such as **procedural, imperative, structured, and object-oriented.**
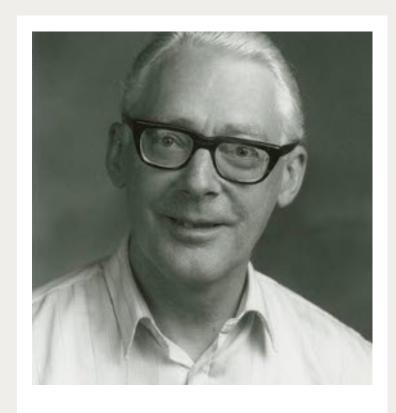
## Operating System (OS)

OS used by Simula was **Unix-like, Windows, z/OS, TOPS-10, MVS**(Multiple virtual storage)

## Influence

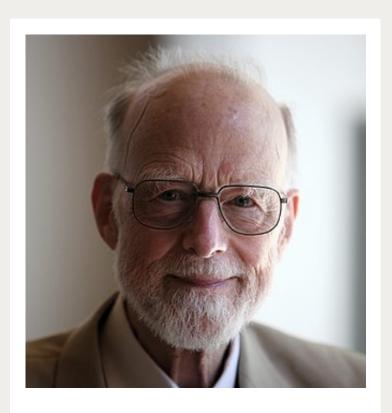Simula was influenced by **ALGOL 60, Simscript.**
Therefore, influenced **BETA, CLU, Eiffel, Emerald, Pascal, Smalltalk,** and many other object-oriented programming languages.

# creators



Ole-Johan Dahl

Kristen Nygaard

Tony Hoare

The developer of SIMULA :
**Kristen Nygaard**
The Designer of the language was:
**Ole-Johan Dahl**
Introduced the concept of record class construct:
**Tony Hoare**

# Classic Hello world:

An example of a Hello world
program in Simula:

```
Begin
    OutText ("Hello, World!");
    Outimage;
End;
```

# Minimal program:

The minimal program is more
conveniently represented as
an empty block:

```
Begin
End;
```

portfolio

# Simulation

E.g: Sam, Sally, and Andy are shopping for clothes. They must share one fitting room. Each one sof them is browsing the store for about 12 minutes and then uses the fitting room exclusively for about three minutes, each following a normal distribution. A simulation of their fitting room experience is as follows:

```
Simulation Begin
    Class FittingRoom; Begin
        Ref (Head) door;
        Boolean inUse;
        Procedure request; Begin
            If inUse Then Begin
                Wait (door);
                door.First.Out;
            End;
            inUse:= True;
        End;
        Procedure leave; Begin
            inUse:= False;
            Activate door.First;
        End;
        door:- New Head;
    End;
```

```
Procedure report (message); Text message; Begin
    OutFix (Time, 2, 0); OutText (": " & message); OutImage;
End;

Process Class Person (pname); Text pname; Begin
    While True Do Begin
        Hold (Normal (12, 4, u));
        report  (pname & " is requesting the fitting room");
        fittingroom1.request;
        report (pname & " has entered the fitting room");
        Hold (Normal (3, 1, u));
        fittingroom1.leave;
        report (pname & " has left the fitting room");
    End;
End;

Integer u;
Ref (FittingRoom) fittingRoom1;

fittingRoom1:- New FittingRoom;
Activate New Person ("Sam");
Activate New Person ("Sally");
Activate New Person ("Andy");
Hold (100);
End;
```

# references

## Reference sites:

https://history-computer.com/simula-guide/

https://en.wikipedia.org/wiki/Simula

https://www.computerhope.com/jargon/s/simula.htm

## Website:

www.simula67.info