Flow diagrams: Rise and fall of the first software engineering notation

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Diagrams 2006
An efficient and transparent logical terminology or symbolism for comprehending and expressing a problem, no matter how involved, in its entirety and in all its parts; and a simple and reliable step-by-step method to translate the problem ... into the code.

Goldstine and von Neumann, 1945
THE UNDERGROUND "STRAIGHT EIGHT" ALL-ELECTRIC SKIT-SET CIRCUIT DIAGRAM

SPECIFICATION
London Regional Stations, connecting H.T. Output Cells with Ohms. Bare copper inductance with minimum or no Resistance.
\[ p = g(I)^3, \]
\[ g(1) = 1, \quad g(i+1) = \frac{1}{2} (f(J, i) + g(i)), \]
\[ f(1, i) = \frac{1}{2}, \quad f(j+1, i) = (f(j, i)^2 - f(j, i)) g(i). \]
ENTRY

Plant, n, 1/2 n, K-1, 2E in
TSs 17,18,19,20

Add P40 -> ac to indicate
odd or even rows

r = n

Test ac

empty

Find p,q,u for x = 1/2
and enter outlet

odd rows

even rows

Test K

K = 0

Form K less 1

EXIT
... the development and application of symbol systems is a dynamic process of analysis and organisation; and the tensions that arise may be resolved by adjustment on either side of the system (syntactic or semantic) until an equilibrium is at least temporarily established.

Goodman, 1976