

Fusion of Talent: Celebrating the Many Roles of Women in Computing



Contribution ID: 30

Type: **Poster**

From Boole to Binary: The Hitchhiker's Guide to Compilers

Tuesday 4 November 2025 13:55 (5 minutes)

As humans, we use language as a tool to reason about the world around us. In 1854, George Boole determined that all linguistic logical operations can be fully conveyed as mathematical expressions, but with one catch: only in the domain of 1 and 0. This insight paved the way for electronic computers, and is why programming languages consist of precise logical expressions. This poster presents a handwritten compiler - a computer program that converts higher-level languages into machine code - built as a graduate development project in the C programming language. The compiler translates a small strictly-typed imperative language into assembly, and is designed to make accessible to non-specialists our computers' everyday translation of logic into number.

Confirm eligibility

Author: FRANKEL, Sophie (UK Atomic Energy Authority)

Session Classification: Poster Session

Track Classification: Poster