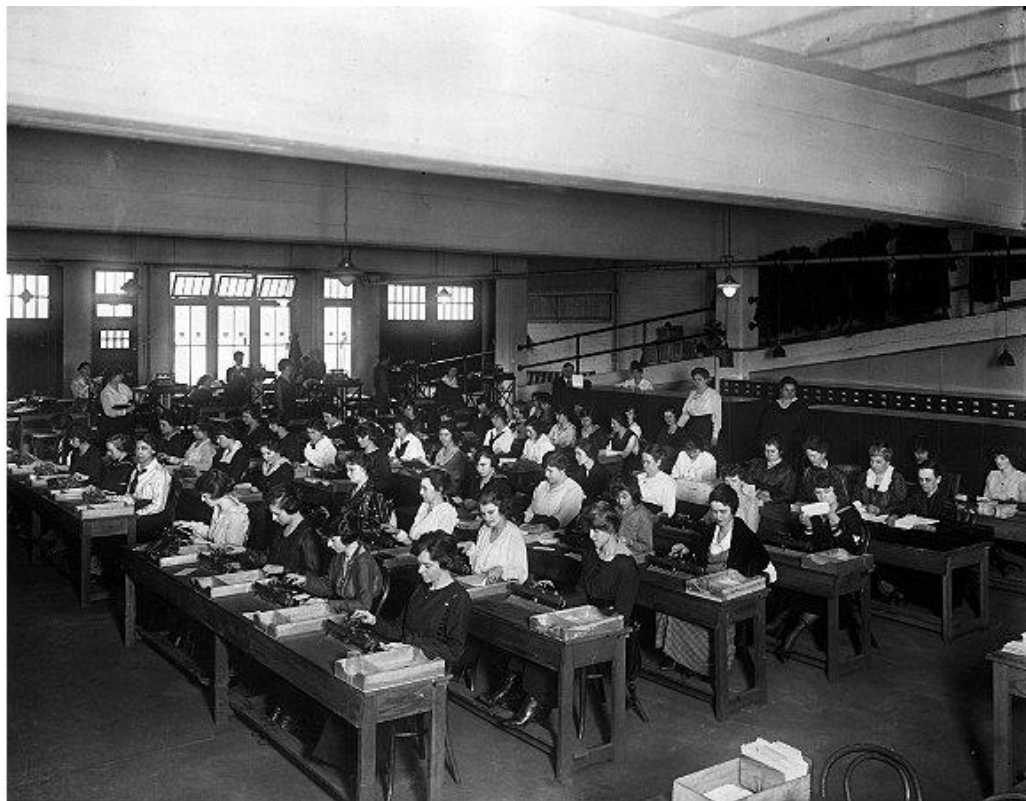


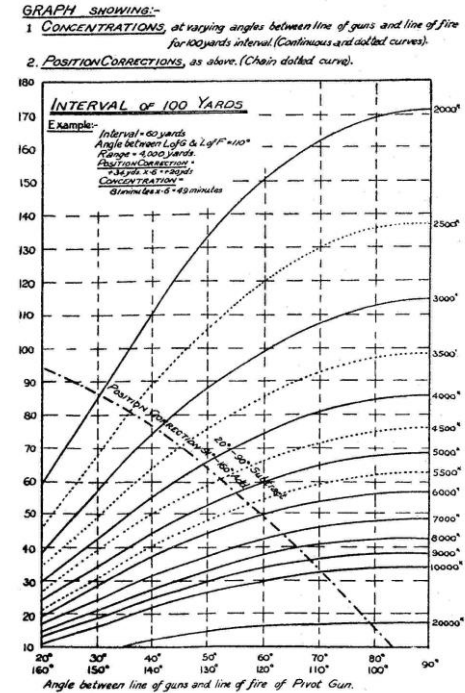
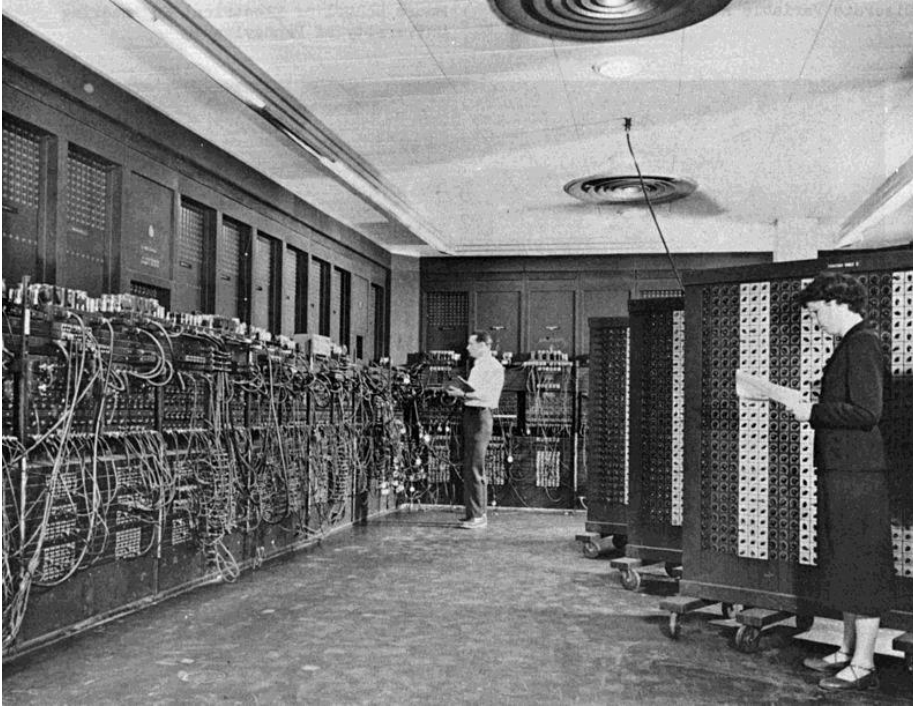
Control Flow 1

J5

Control flow
if-then-else
switch



Women workers ('computers') in a calculation "factory," 1930s. Courtesy of the Library of Congress.



Calculating a trajectory could take up to 40 hours using a desk-top calculator. The same problem took 30 minutes or so on the Moore School's differential analyzer. But the School had only one such machine, and since each firing table involved hundreds of trajectories it might still take the better part of a month to complete just one table. [Winegrad & Akera 1996]



Source: Ad Meskens, Wikimedia Commons



Control Flow

Control flow statements allow the execution of the program to deviate from a strictly sequential execution of statements (*selection*).

Imperative programming: sequence, ***selection***, iteration.

if-then & *if-then-else* statements

- The *if-then* construct *conditionally* executes a block of code.
- The *if-then-else* construct *conditionally* executes one of two blocks of code

The **switch** statement

- The **switch** statement selects one path among *many*.
- Execution *jumps* to the first matching **case**.
- Execution *continues* to the end of the **switch** unless a **break** statement is issued.

The `switch` expression

- The `switch` expression selects one *value* among many.
- Execution jumps to the first matching `case`.
- The value of the expression is given by the `yield` operator in the matching case.