

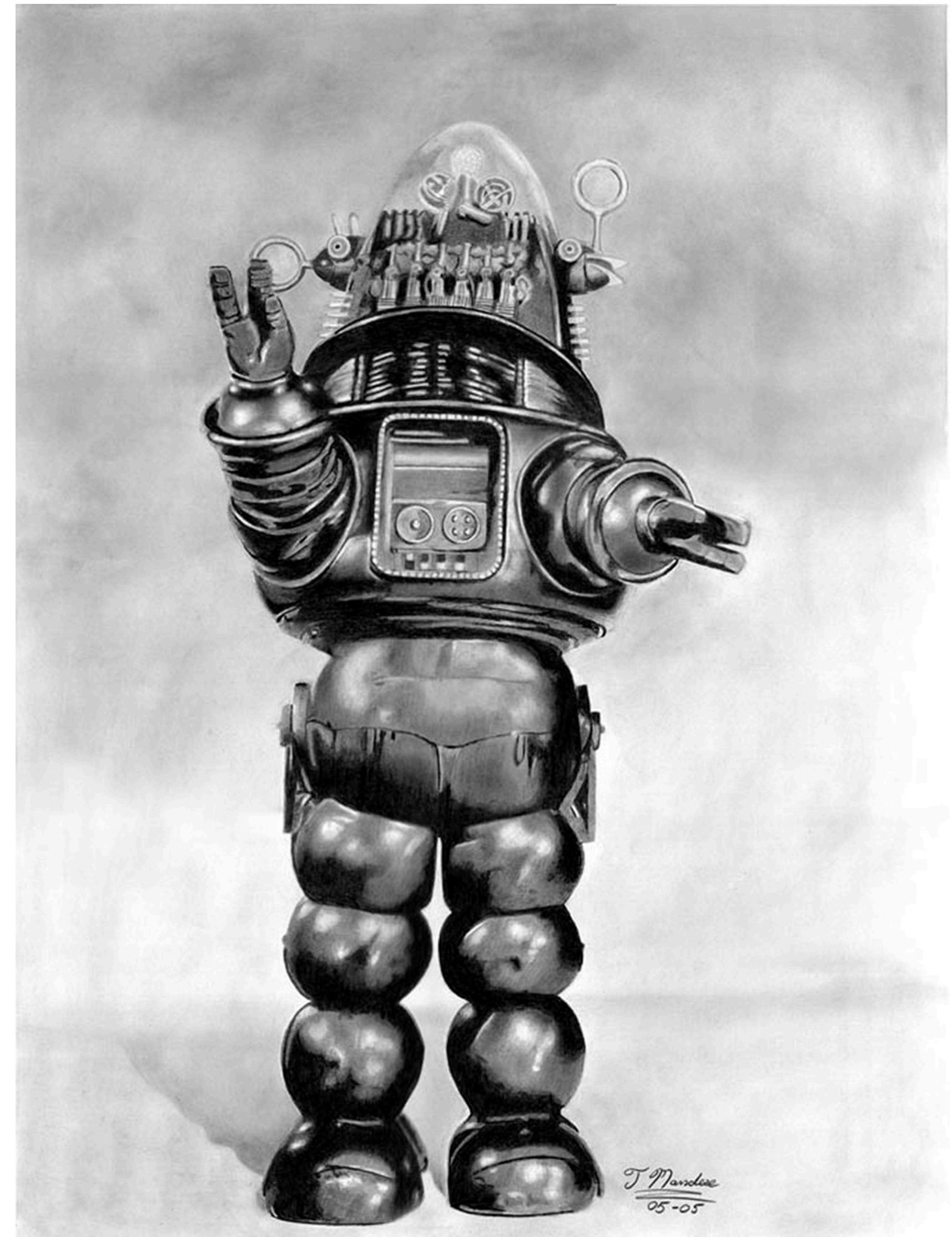
Essential Computing 1

Essential Computing

Introduction

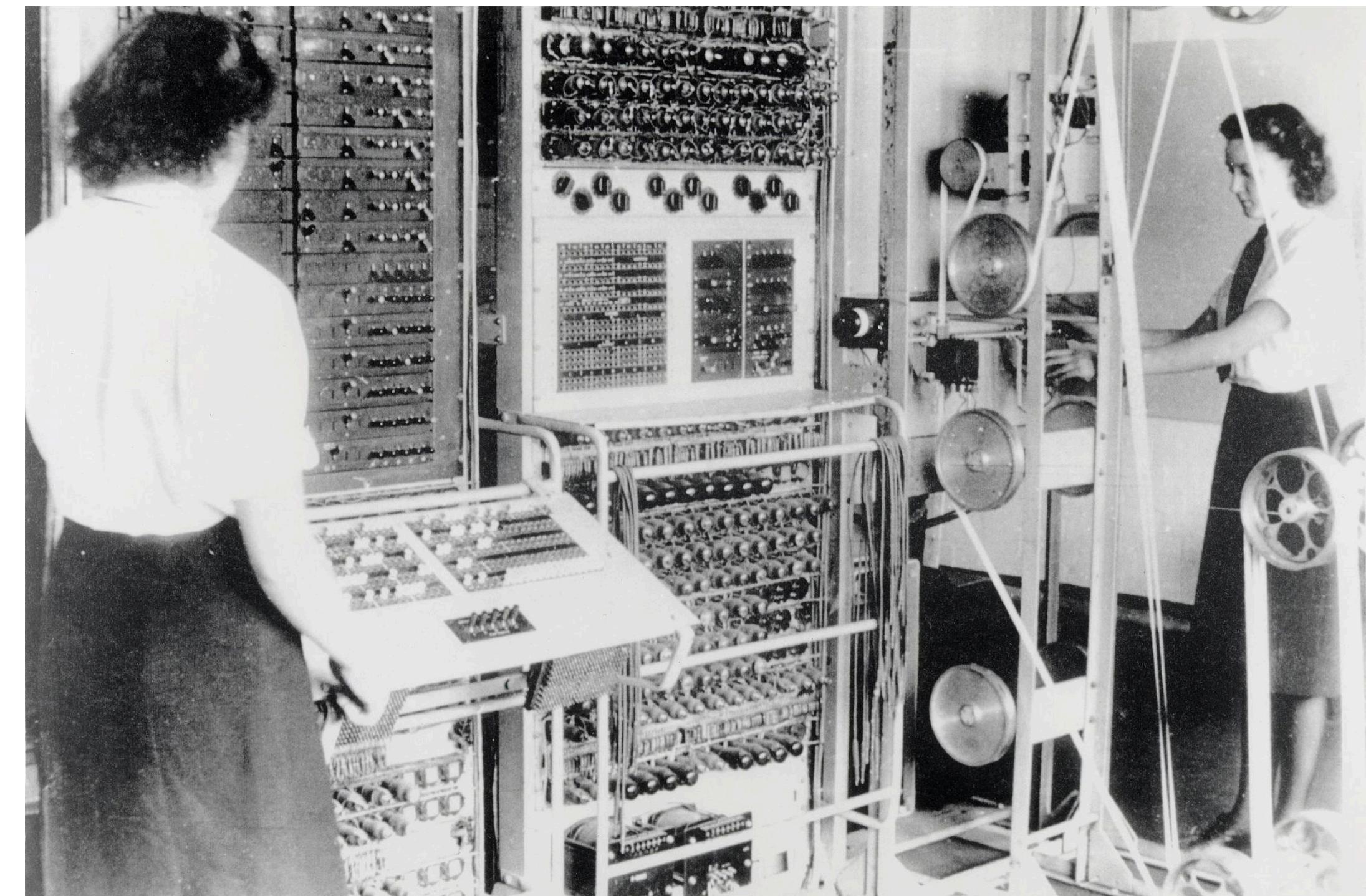
Computer Science

Computational Thinking



Computer Science

Fixed and stored programs



Colossus 1944, used in WW2.

Code

Declarative & Procedural

Code

Low-level and high-level

Code

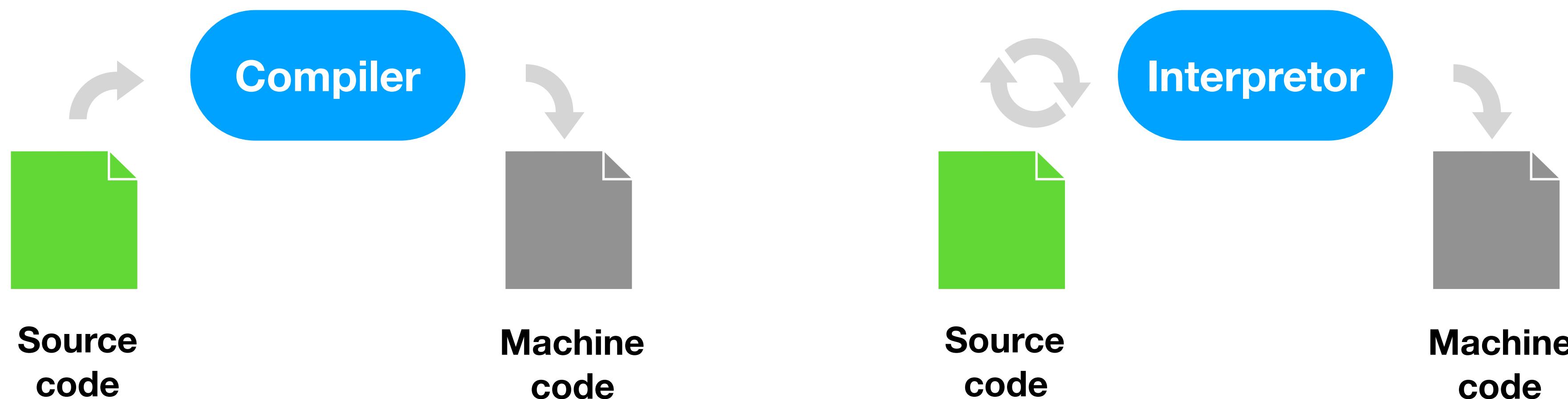
Low-level



Machine code

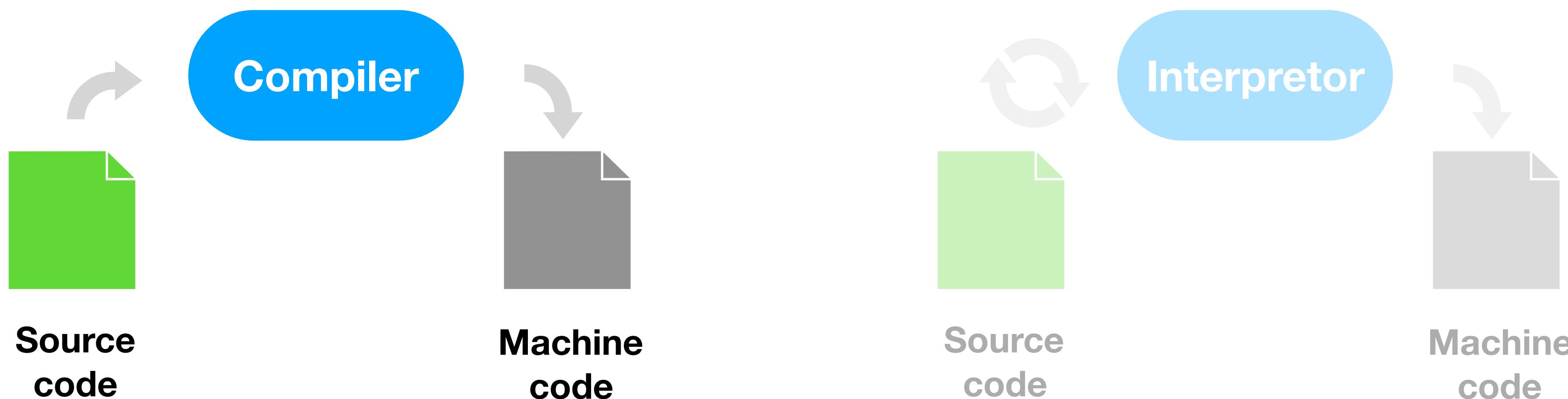
Code

High-level: compiled or interpreted



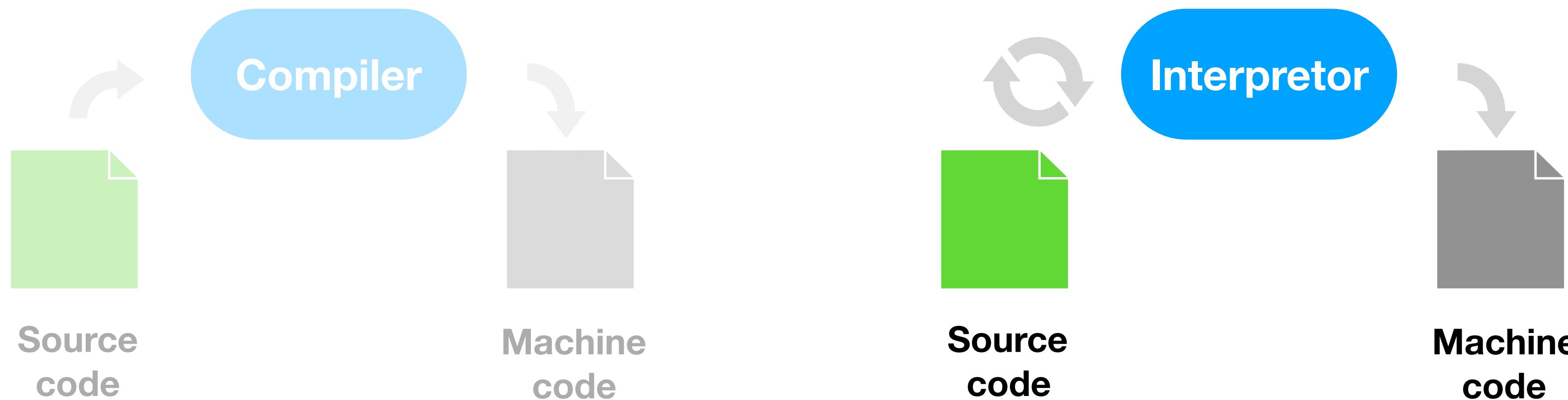
Code

Compiler: all at once, before execution.



Code

Interpreter: little by little, while executing.



Types of languages

Object Oriented Programming (OOP)

Functional Programming

Haskell

```
nums = [2,4,3,1,2] :: [Int]
sorted = List.sort nums
```

Java

```
import java.util.Arrays;

public class Example {
    public static void main(String[] args)
    {
        int[] nums = {2,4,3,1,2};
        Arrays.sort(nums);
    }
}
```

Source: <https://rosetta.alhur.es/compare>

Language

Lexicon (symbols/primitives)

Syntax (rules)

Semantics (meaning)