From Punch Cards to Hyperspace

Twelve windows on code and human judgment.

Alien Mind · Zafrullah Khan, Ed.D.

HISTORY / CONTEMPORARY ILLUSTRATION / IMAGINED

These are overlapping layers, not one language replacing another.

The final two frames are possibilities, not reported discoveries.



01 Punch cards

1928 format / 1960s card example

```
X = A + B
```

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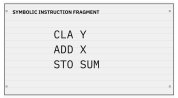


02 Machine instruction

IBM 704 / 1954–1955

```
000101000000
000000000
000000011000111
```

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03 Assembly

IBM 704 assembly / 1956–1957

```
CLA Y
ADD X
STO SUM
```

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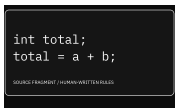
04 FORTRAN / COBOL

FORTRAN 1957 / COBOL 1959–1961

```
X = A + B

      ADD A TO B.
```

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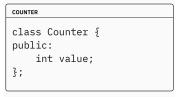


05 C

C / 1970s

```
int total;
total = a + b;
```

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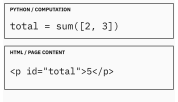


06 C++ objects

C++ example / 1980s–1990s

```
class Counter {
public:
    int value;
};
```

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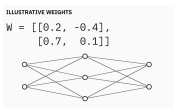
07 Python / web

Python and web / 1990s–2020s

```
total = sum([2, 3])

<p id="total">5</p>
```

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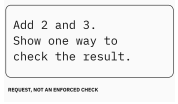
08 Illustrative weights

1950s roots / 2010s–2020s expansion

```
W = [[0.2, -0.4],
     [0.7,  0.1]]
```

ILLUSTRATIVE · not measured weights

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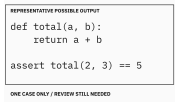
09 Conversational prompting

Conversational prompting / 2020s

```
Add 2 and 3.
Show one way to
check the result.
```

A request, not an enforced check

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10 Model-written code

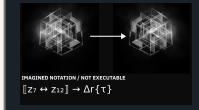
Model-written code / 2020s–2026

```
def total(a, b):
    return a + b

assert total(2, 3) == 5
```

One assertion checks one case

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11 IMAGINED notation

IMAGINED / undated possibility

$$⟦z_7 ↔ z_{12}⟧ → Δr\{τ\}$$

NOT EXECUTABLE / VISUAL METAPHOR

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12 IMAGINED hyperspace

IMAGINED / mathematical metaphor

$$Π_4(u,v,w,q) ↻ \{⊕ : ⊗\}$$

NOT EXECUTABLE / VISUAL METAPHOR

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