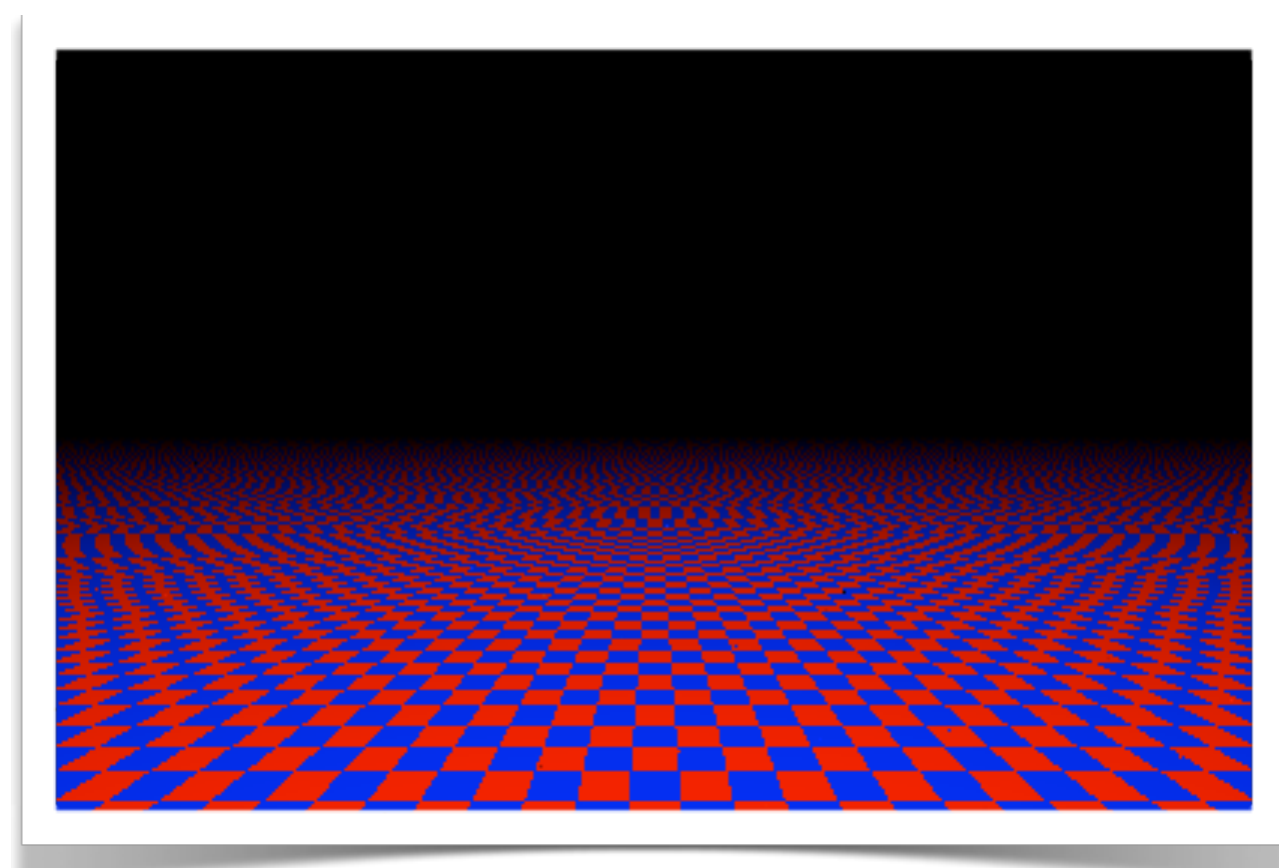# EnerJ:
A Programming Language for Low-Power Computers
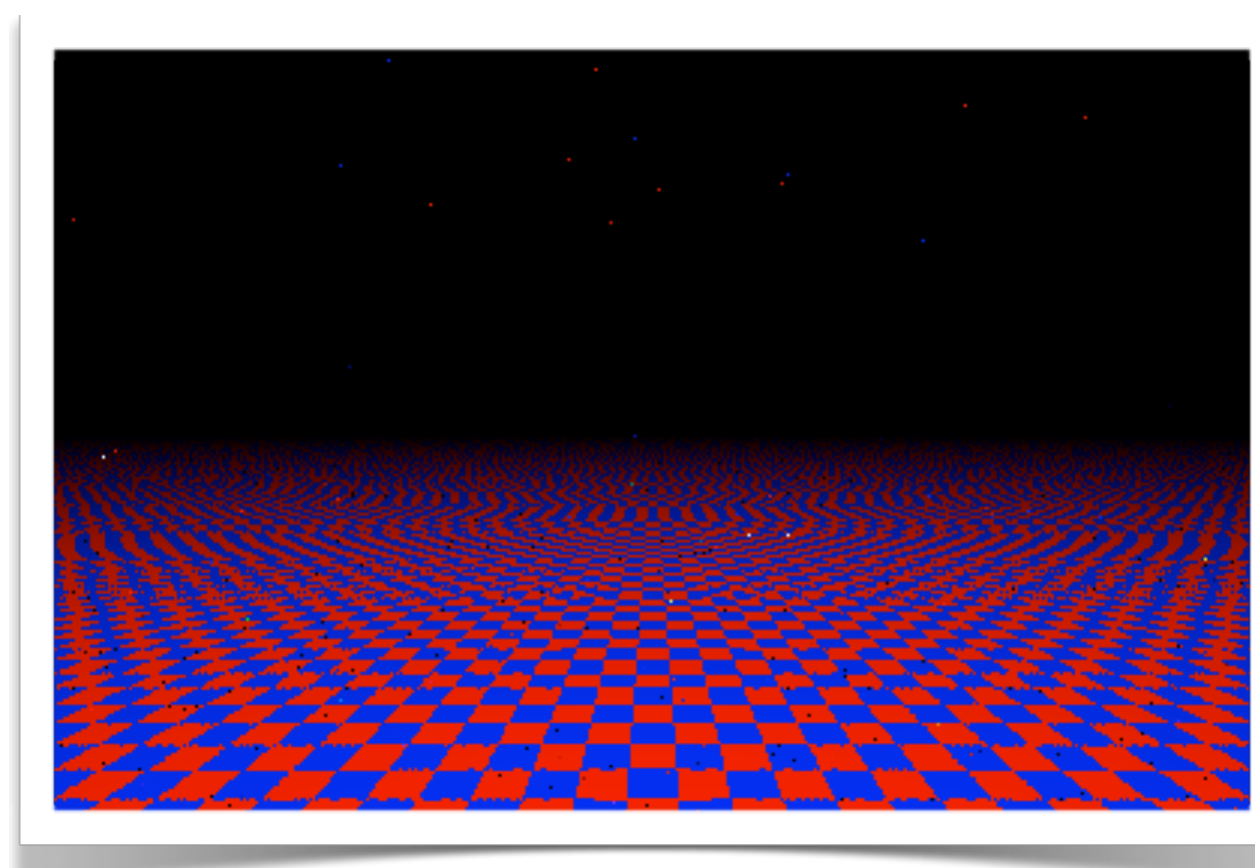
Power constraints are now critical for all types of computer systems.

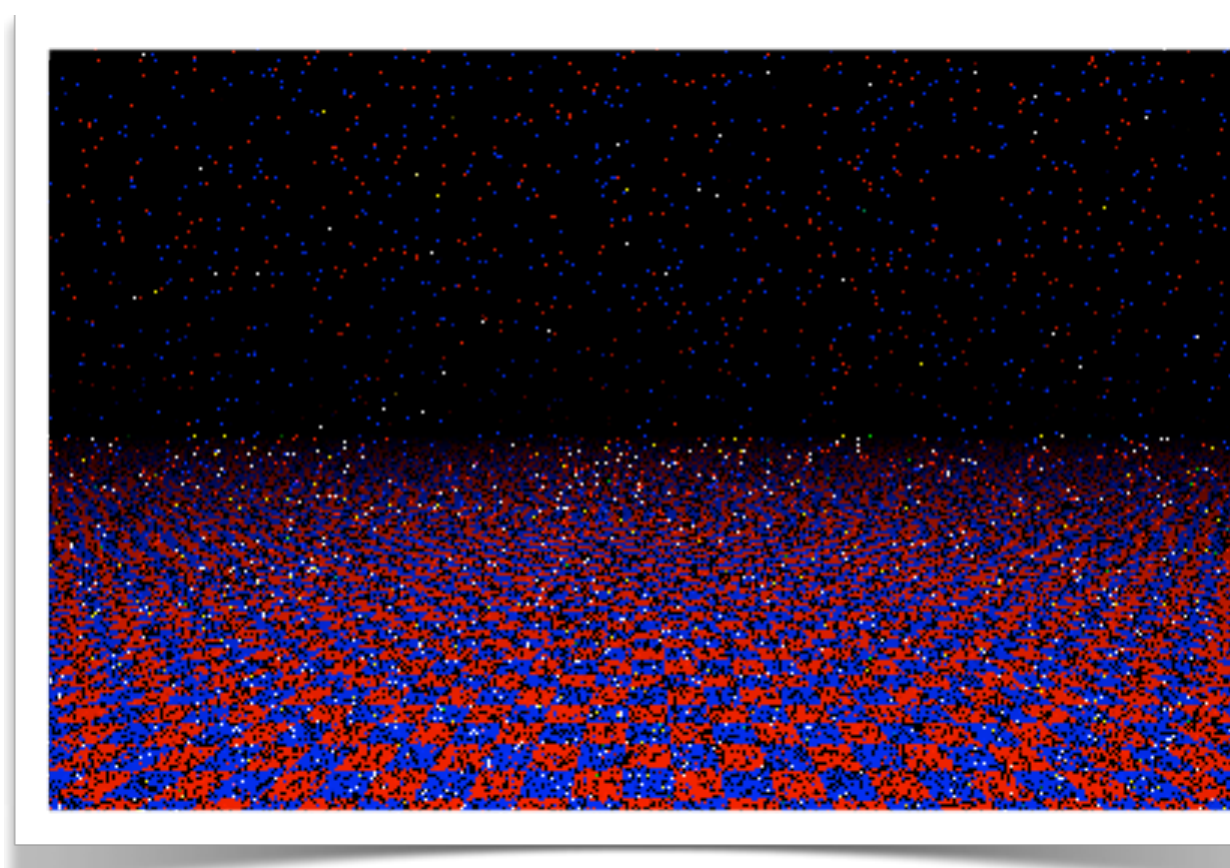How can a programming language help save energy?

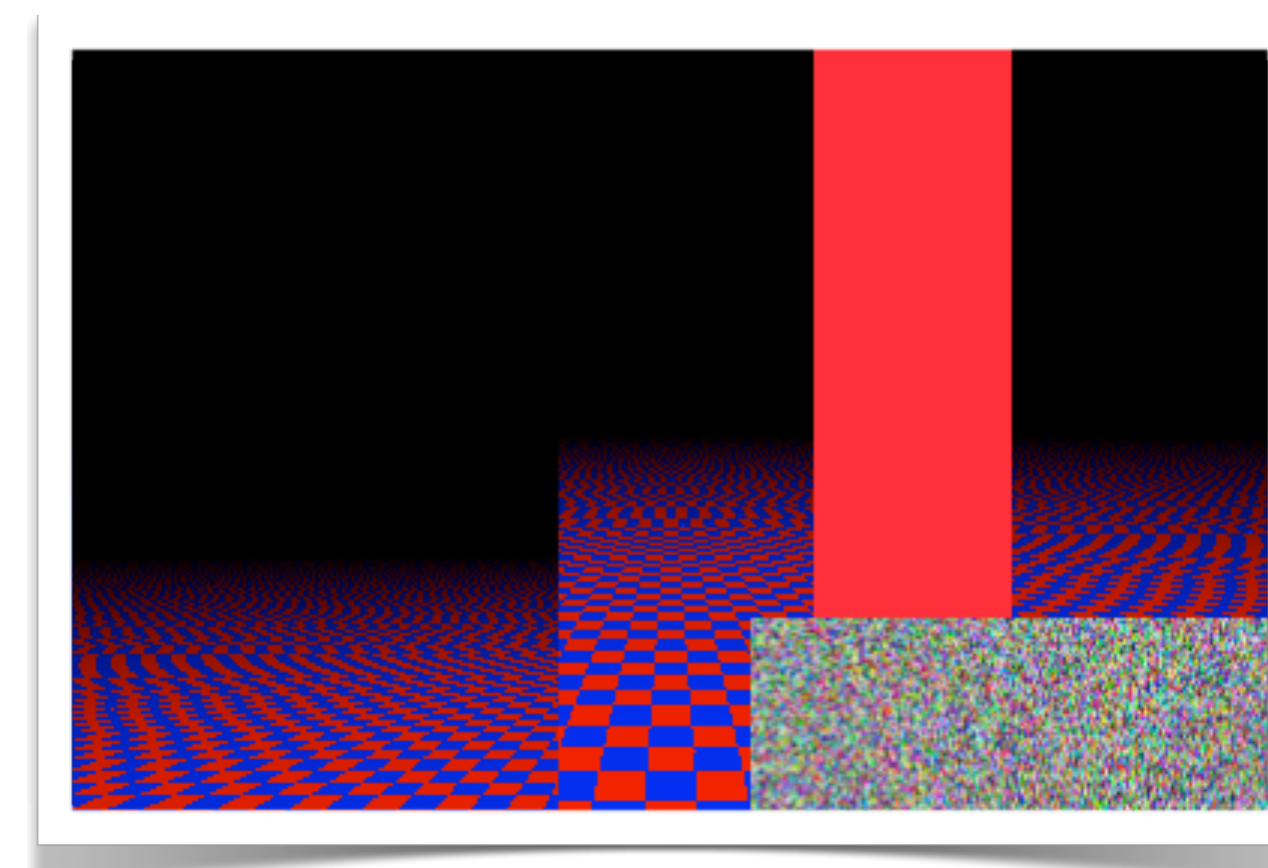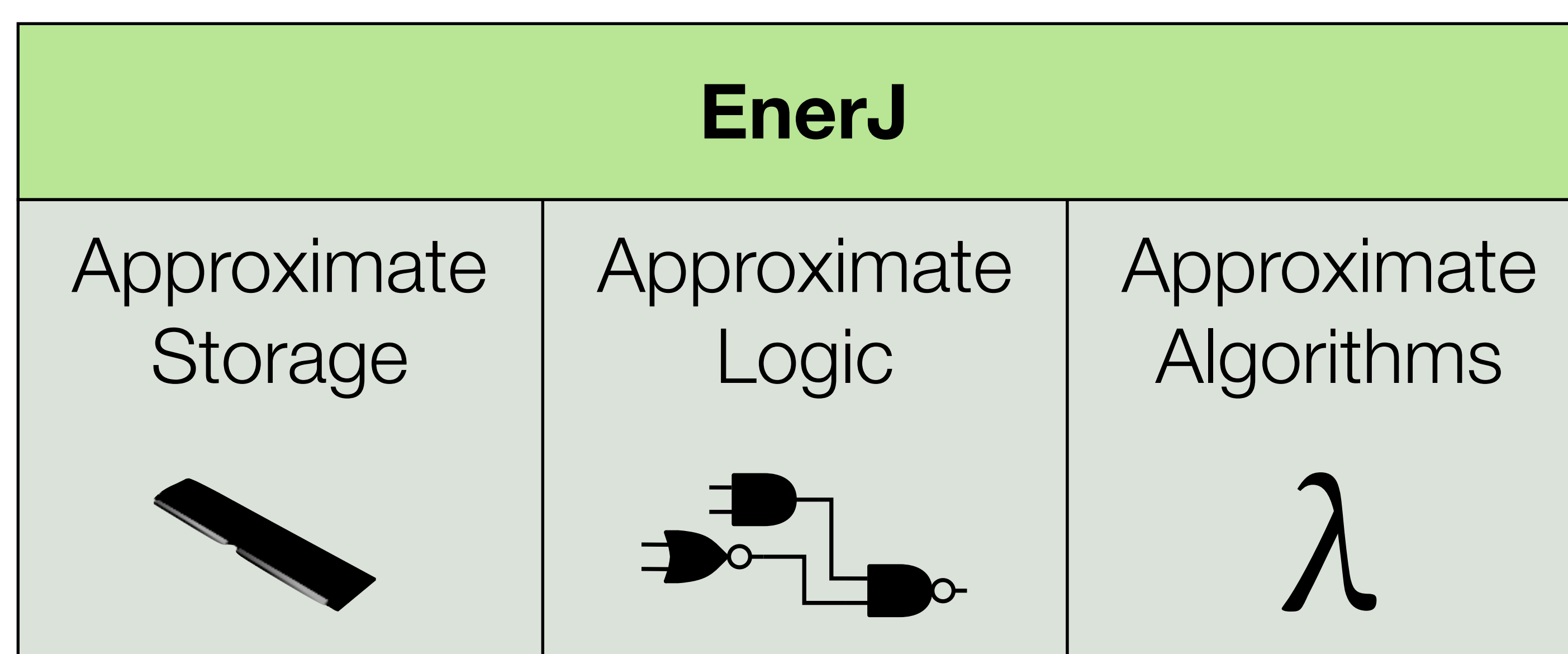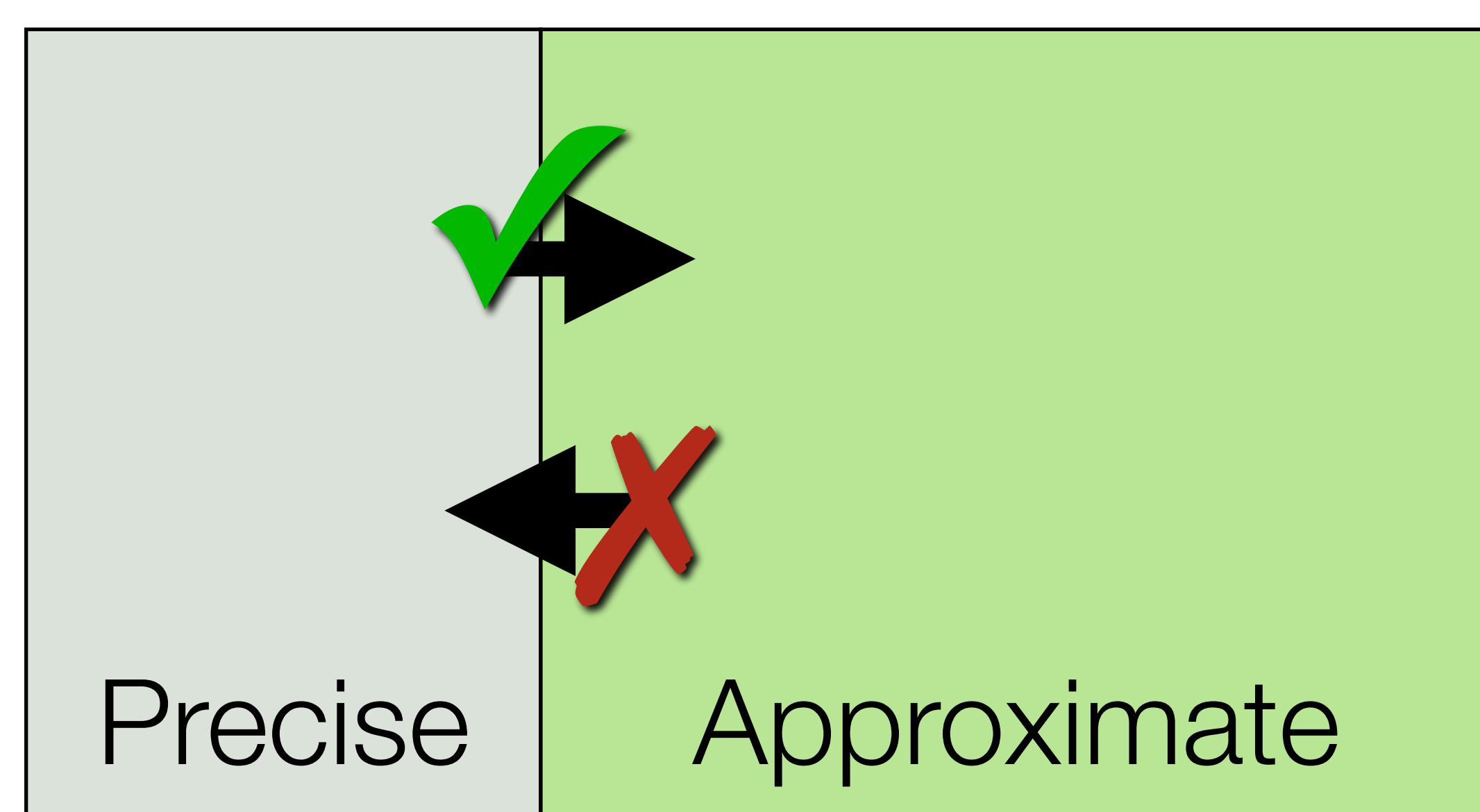*Easy!* We'll let programmers **trade off correctness for energy**.

correct   optimal   acceptable?   useless

EnerJ makes unreliable, low-power computers usable by providing *safety* and *generality*.

Precise   Approximate

EnerJ

Approximate Storage	Approximate Logic	Approximate Algorithms

λ

```
@Approx int a = ...;
int p;
p = a;                    illegal (approximate-to-precise assignment)

p = endorse(a);           legal (with programmer's explicit permission)

if (a == 5) {             illegal (implicit information flow via control)
    p = 1;
} else {
    p = 2;
}
```

sa**⫻**pa

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