The principal programming paradigms

"More is not better (or worse) than less, just different."

Each language is placed next to a programming paradigm it supports well.
Inspired by "Concepts, Techniques, and Models of Computer Programming."

More declarative

- Descriptive declarative programming
  - XML

- Turing equivalent
  - First-order functional programming
    - + closure
      - Lazy dataflow programming
        - Lazy declarative concurrent programming
          - Lazy constraint programming
            - Oz, Alice
          - LIFE, AKL
            - + by-need synchronization

- Data structures only
  - + procedure
    - Dataflow and message passing
      - Unix pipes
        - Concurrent constraint programming
          - CLP, ILOG Solver
            - + thread
              - + single assignment
                - Concurrent logic programming
                  - FrTime
                    - + synchronization on partial termination

- Functional
  - + thread
    - Monotonic dataflow programming
      - Declarative concurrent programming
        - Concurrent logic programming
          - + thread (channel)
            - E, Oz, Alice
              - + port (channel)
                - Concurrent object-oriented programming
                  - Erlang, AKL
                    + local cell

- Weak state
  - + closure
    - Encapsulated functional programming
      - + name
        - (unforgeable constant)
      - + thread
        - + single assign.
          - + thread
            - Lazy functional programming
              - Lazy constraint programming
                - Oz, Alice
              - Prolog, SQL
                - + solver

- Shared state
  - + log
    - Active object programming
      - E, Oz, Alice
        - publish/subscribe, tuple space (Linda)
      - Tuple space (Linda)

- Stateful
  - Dataflow and message passing
    - + port (channel)
      - Multi-agent dataflow programming
        - Oz, Alice, AKL
      - Oz, Alice
        - Collective dataflow programming
          - + port
            - Concurrent constraint programming
              - LIFE, AKL
                - + by-need synchronization

- Less declarative

- Imperative programming
  - Pascal, C, Prolog

- Sequential object-oriented programming
  - Java, OCaml

- Stateful functional programming
  - Prolog, SQL

- Shared-state concurrent programming
  - Imperative programming

- Software transactional memory (STM)
  - SQL

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