Other weird languages and paradigms

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Overview

Turing machine and programming

A thing to realize about computers...
anything goes.

If that anything is Turing complete,
then it even does anything.

Turing machine and programming

Turing complete = can simulate a universal Turing machine.
Turing machine = $\langle Q, \Gamma, b, \Sigma, \delta, q_0, F \rangle$

Q = states

Γ = alphabet of all symbols

b = blank symbol

Σ = input symbols

δ = transition function

q_0 = initial state

F = final state

=video=

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Kitten

A "concatenative" programming language, i.e. imperative and functional.

- **Evaluation** - programs are evaluation of expressions not execution of orders
- **Immutability** - once created value does not change
- **Purity** - function called with same param, always same output

See =Kitten=.

Kitten examples

```
"meow" say
...
define greet (List<Char> -> +IO):
  -> name;
  ["Hello, ", name, "!"] concat say

"What is your name? " ask
greet
```

Kitten properties

- ▶ Polymorphism
- ▶ Lambdas
- ▶ Permissions for possible side effects (-¿ +IO)

See =Kitten intro=.

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LOLCODE

A procedural meme cat based language just for LOLZ.

See =Esolang=

=tutorial=

LOLCODE examples

```
HAI 1.2
  I HAS A my_num ITZ 3
  BTW this just adds a variable
KTHXBYE
```

Verbose thematic languages

Want to write a play or a recipe?

=Shakespear=
=Chef=

Shakespear example

The Infamous Hello World Program.
Romeo, a young man with a remarkable patience.
Juliet, a likewise young woman of remarkable grace.
Ophelia, a remarkable woman much in dispute with Hamlet.
Hamlet, the flatterer of Andersen Insulting A/S.
Act I: Hamlet's insults and flattery.
Scene I: The insulting of Romeo.
See =Shakespear Hello World=

Chef example

Hello World Souffle.
This recipe prints the immortal words "Hello world!", in a basically
brute force way. It also makes a lot of food for one person.
Ingredients.
72 g haricot beans
101 eggs
108 g lard
111 cups oil
32 zucchinis
119 ml water
114 g red salmon
100 g dijon mustard
33 potatoes
...
See =Chef Hello World=

What did we miss in the languages or what is superfluous?

Chicken

Why so many words! Totally useless, let's just use CHICKEN!

=Chicken=

Whitespace

Why words at all? Let's use whitespace!

=Whitespace=

Piet

An colour interpreting programming language inspired by Piet
Mondrian.
See =Piet homepage=.