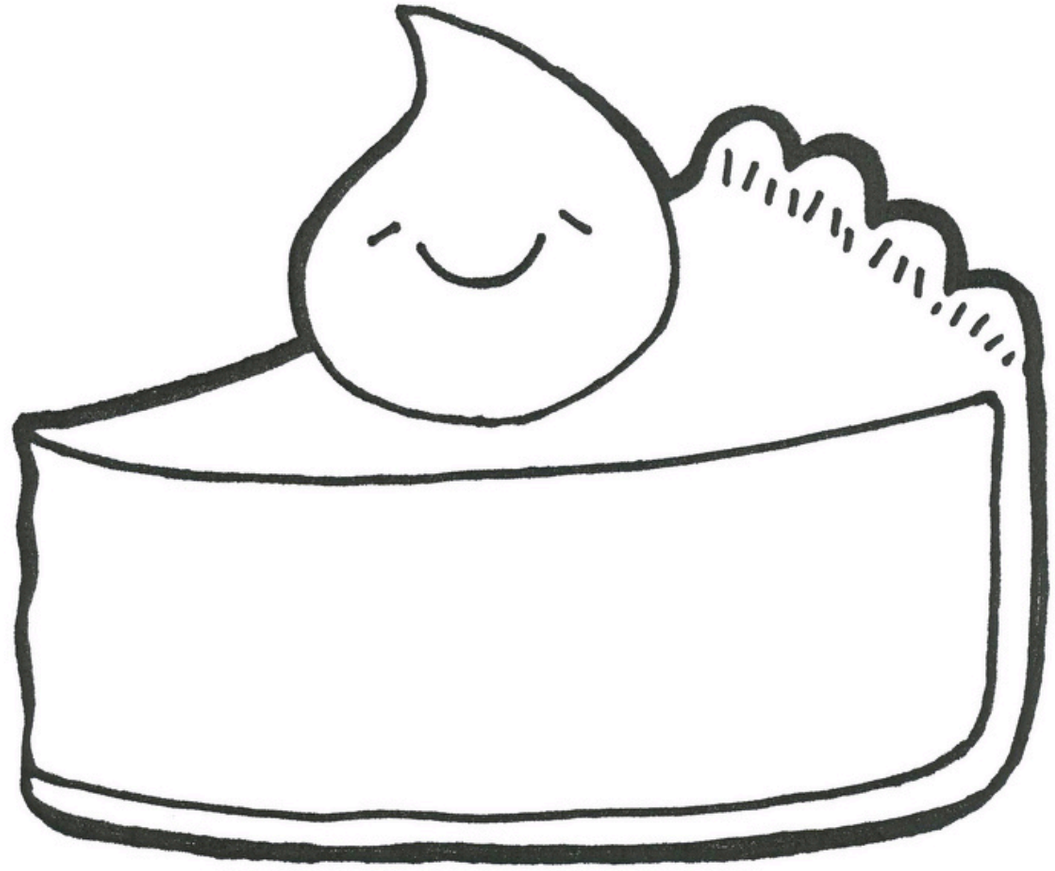
Easy as Pie?

Teaching Code Literacy



Sarah Allen
@ultrasaurus

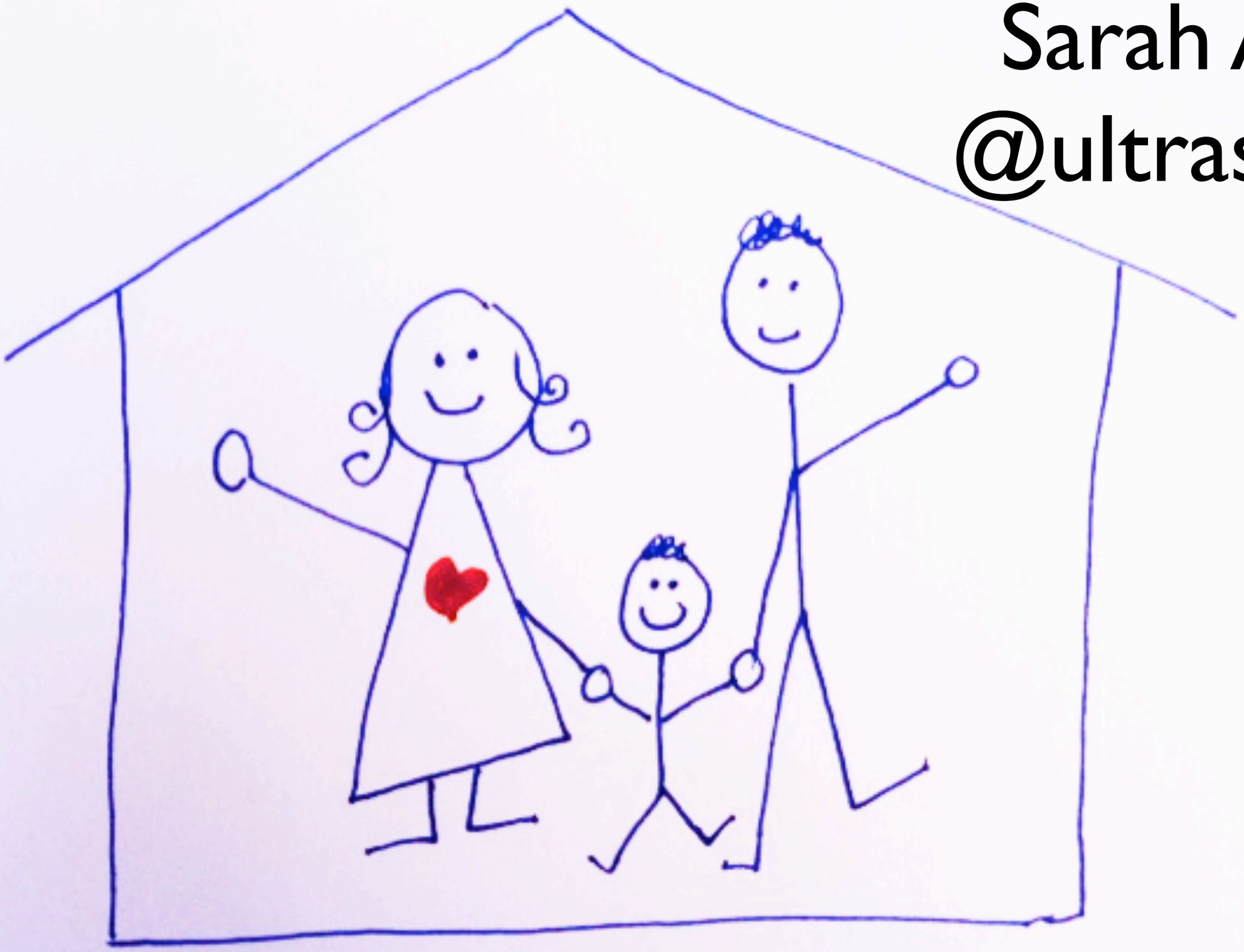
Coding Literacy

Blazing Cloud™

mightyverse™

What you want to say, in any language, anywhere

Sarah Allen
@ultrasaurus



Sarah Allen
@ultrasaurus

Why?

Pie: the language Teaching Kids

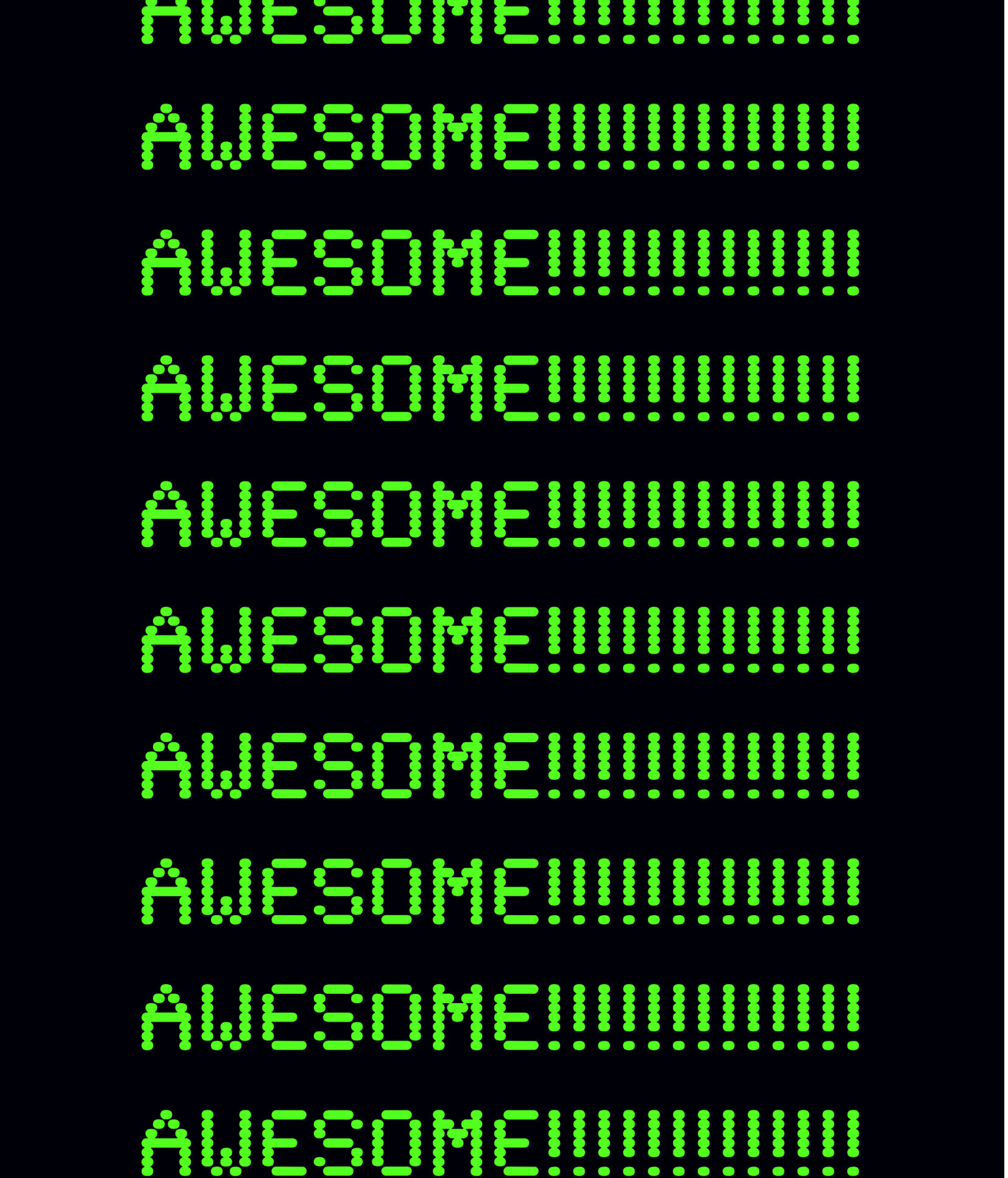
Why?

Pie: the language ~~Teaching~~ Kids

Why?

Pie: the language Learning from Kids

Why me?
Why teach kids to code?
Why create a language?
Why Ruby?

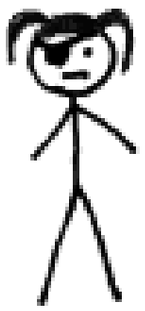


Intrinsic Gratification

Intrinsic Gratification

Results

Results



ultrasaurus
Level 9
Pastamancer

Muscle: **77 (64)**

Mysticality: **78 (72)**

Moxie: **79 (63)**

HP **130 / 130**

MP **122 / 122**

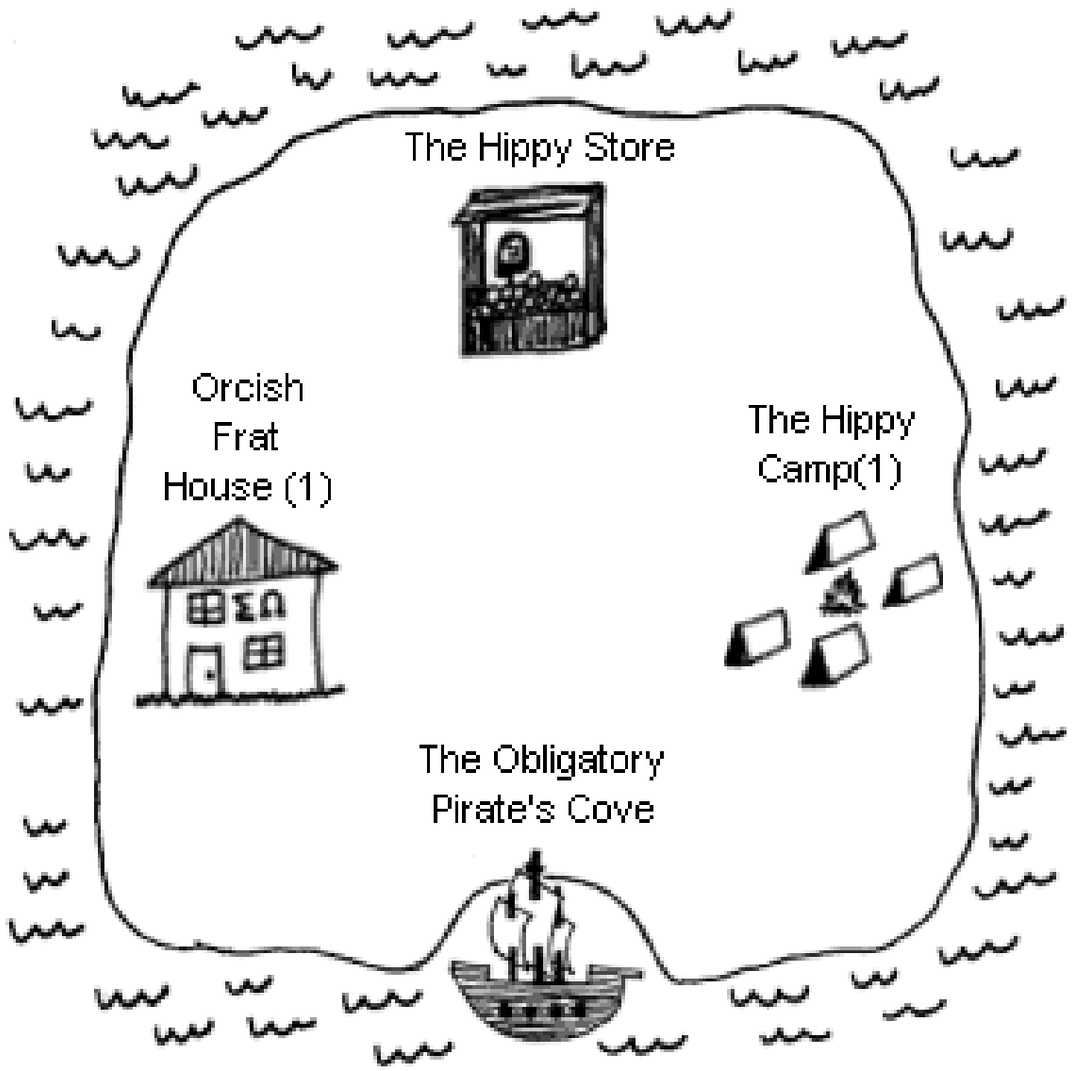
15,270

200

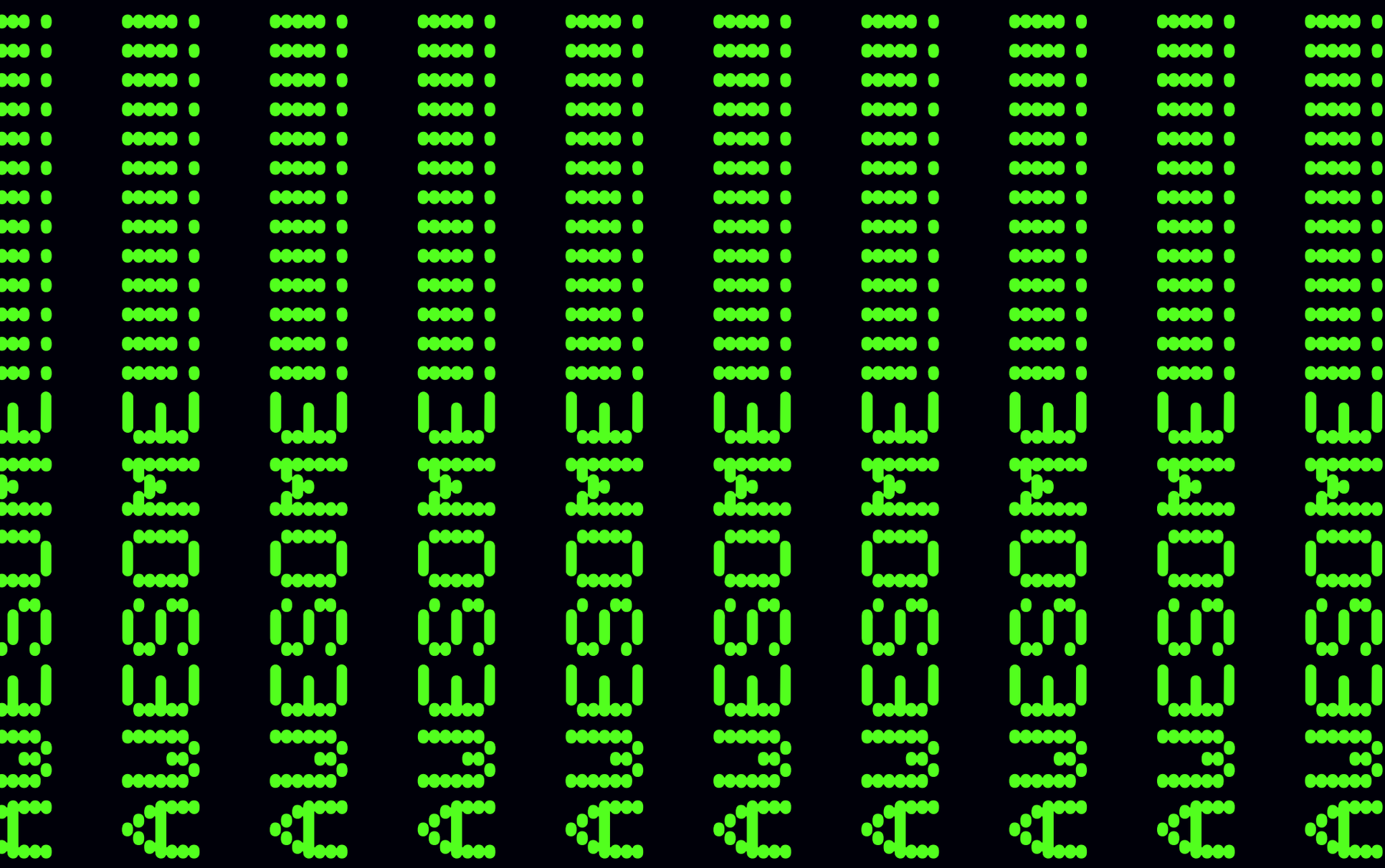
Current Quest:

(This Quest Tracker is a work in progress. Check your **Quest Log** for quests in the meantime.)

The Mysterious Island of Mystery



Back to the Main Map



Why teach kids code?

- Software is part of how our world works
- Skill for thinking & communicating
- Before they start believing they can’t
- By high school some will outpace adults

Space Bar
switches guns

Score 13

Hi Score 104

language?

Small code

Big effect

Simple syntax

“real” language

Domain Specific Language

Domain = Web Games

http://pie-bakery.heroku.com/

Pie: the language

- What is Pie?
  (demo)
- How do you make Pie?
  (the code)

Mozilla Firefox

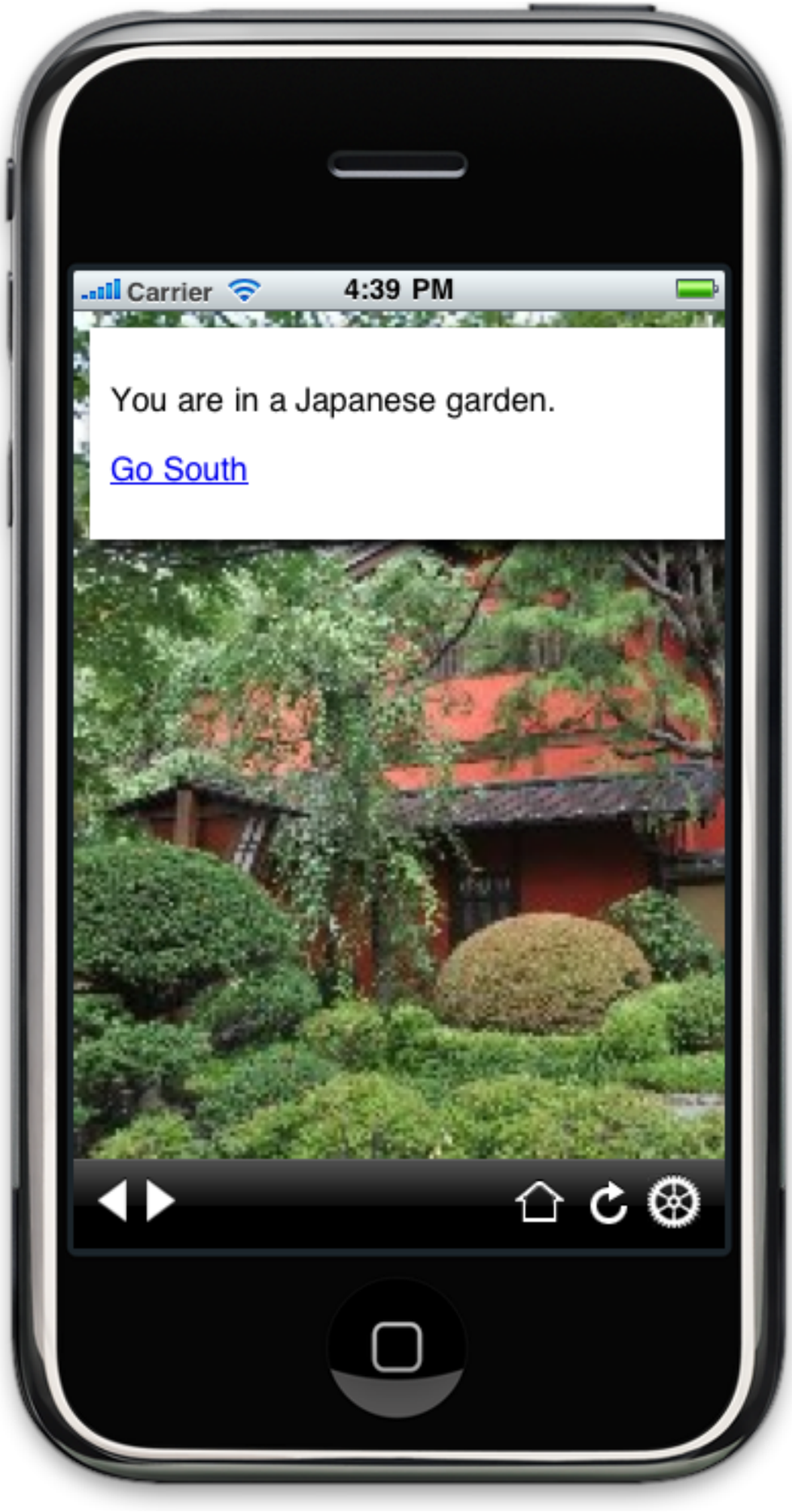
http://localhost:3000/play/1/start

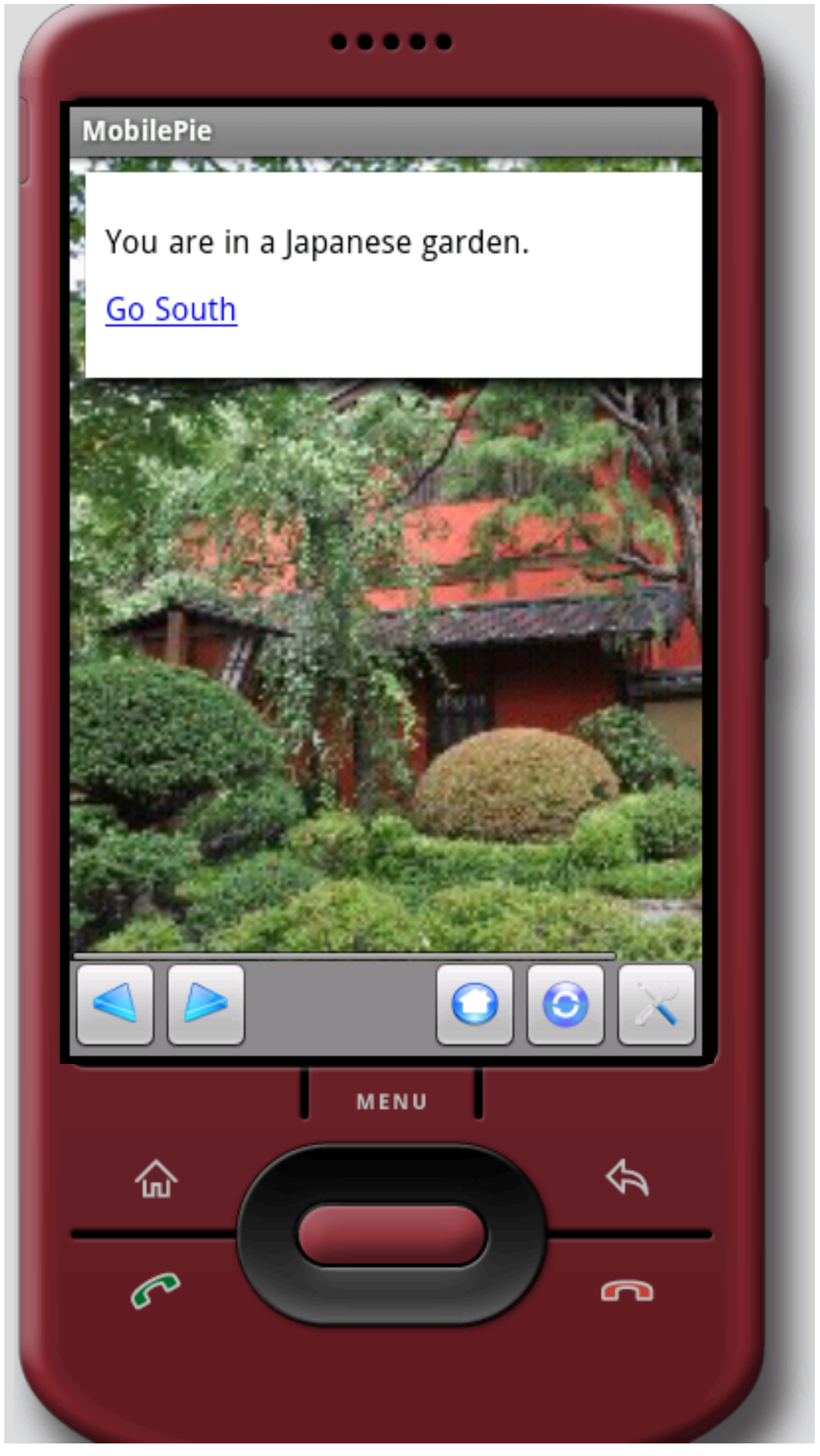
Google

http://localhost:3000/play/1/start

People are dancing in the park like Elvis. You see trees to the north and a path to the east

Go North Go East


Carrier
4:39 PM
You are in a Japanese garden.
Go South


MobilePie
You are in a Japanese garden.
Go South
MENU

place

```
place park:"You are in a park..."
place trees:"You are in a Japanese garden."
place river_edge:"The path ends at a river"
place in_the_river:"You walk into the river
and drown."
```

```
place(park:"You are in a park...")
place(trees:"You are in a Japanese garden.")
place(river_edge:"The path ends at a river")
place(in_the_river:"You walk into the river
and drown.")
```

```
place(:park => "You are in a park...")
place(:trees => "You are in a Japanese garden
place(:river_edge => "The path ends at a rive
place(:in_the_river => "You walk into the riv
and drown.")
```

```
place(park:"You are in a park...")
place(trees:"You are in a Japanese garden.")
place(river_edge:"The path ends at a river")
place(in_the_river:"You walk into the river
and drown.")
```

だいさんかを

いっしょう

べんきょうする

つもりです

```
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park.path trees:north, river_edge:east
river_edge.path in_the_river:east!
```

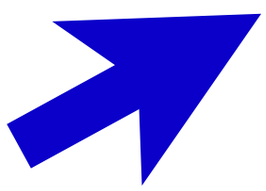

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```

Metaprogramming

Ruby Techniques

used in the Pie DSL

- method_missing
- blocks with instance_eval

```
pie game.pie
```

```
File.open(pie_file) do |f|


end
```

```
pie game.pie
```

```
File.open(pie_file) do |f|
  new_pie.instance_eval do
    eval(f.read)
end
```

```
place park:"You are...
```

```
def place(options)
  Place.new(places, options)
end
```

```
park.path trees:north
```

```
def method_missing(name)
    ...
end
```

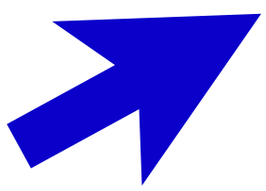
```
park.path trees:north
```

```
def method_missing(name)
    place = places[name]
    ...
```

```
park.path trees:north
```

```
class Place

  def path
    ...
```



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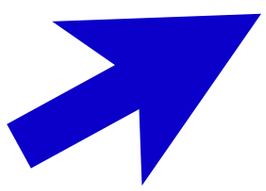

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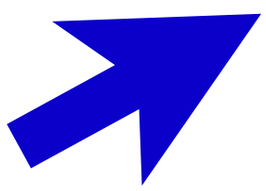

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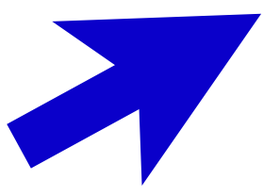

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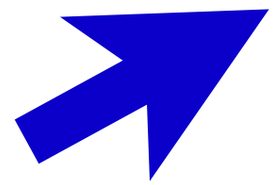

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place in_the_river:"You walk into the river
and drown."

park.path trees:north, river_edge:east
river_edge.path in_the_river:east!
trees.path river_edge:"go through the trees"
```

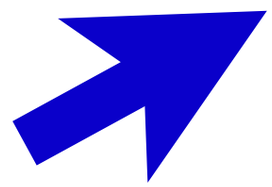

Tech Notes

- Sinatra web app
  http://www.sinatrarb.com/
- Rails IDE
  http://rubyonrails.org/
- Rhodes mobile apps
  http://rhomobile.com/

What I Learned

- Installation is boring
- Teach Different Things
  language, environments, physical computing
- Seek Immediate Gratification
- Errors are part of the user experience

Next Steps

- Snazzier games
- Create a path to writing more code
- IDE improvements

https://github.com/blazingcloud/pie
gem install pie

https://github.com/blazingcloud/pie-bakery
http://pie-bakery.heroku.com

https://github.com/blazingcloud/mobile-pie
rake run:iphone
rake run:android

@ultrasaurus
http://teachingkids.railsbridge.org/