Concepts

- What is duck typing?
- Can you name some programming patterns? template method, strategy, observer, composite, iterator, commands, adapter, proxy, decorator, singleton, factory, builder, interpreter
- What is a closure?

Web

- What happens when you type an address in the browser?
- What are the four HTTP verbs, and when should they be used?
- Name of HTTP status codes and what they mean.

Programming Questions

- FizzBuzz
- Given string a and string b, return index of string a where string b occurs, or nil/null/void if string b does not occur in a

SQL Questions

- Given a users table with name, age:
  - Return all users older than 25 with name "John"
  - Return at most 5 users with name that includes "John", ordered by age descending
  - For each set of users with the same age, return the count

Ruby Questions

- What is the difference between a symbol and a string?
- What do require, load, include, extend do?
- What are the ways to define a class method?

``` class Person def Person.find(id) end end ```	``` class Person def self.find(id) end end ```

``
class Person
 class << self
  def find(id)
  end
 end
end
``
	``
	class Person
	 instance_eval do
	  def find(id)
	  end
	 end
	end
	``

- Describe what happens when you call a method
  - Ancestors chain, eigenclass, class methods, singleton methods

- Implement map
- Use define_method

CSS Questions

*	#X	.X	X Y	X + Y	X > Y	X ~ Y	X[title]

X[src='a']   X[src*='a']   X[src^='a']   X[src$='a']   X[src~='a']

- Second list item? li:nth-child(2)
- Third-to-last list item? li:nth-last-child(3)
- First list item under unordered list? ul li:first-child
- First letter of a paragraph? p::first-letter

Given the following HTML, write as many CSS selectors as you can to get the #banana element

```
<div class="firstdiv">
 <span id="apple"></span>
 <span id="banana" title="fruits" attr="foobar">
  <span></span>
 </span>
</div>
<div class="seconddiv">
 <span attr="fooba"></span>
</div>
```

#apple	#apple + span	span[attr*=bar]	.firstdiv span:nth-child(2)
.firstdiv #banana	span[title]	span[attr$=r]	.firstdiv span:nth-last-child(2)
.firstdiv > #banana	span[title=fruits]	span[at*=foobar]	.firstdiv span:last-child

Regular Expressions

- Implement String#strip.
- Match a phone number as best as you can.
- Match each set of texts with one regular expression:

I type "Hello World" in the New Update megaphone
I select one channel I select two channels
I sleep for 3 seconds I sleep for 12 seconds

I press the a key
I press the z key

Testing

- What are the upsides and downsides of TDD?
- What are the upsides and downsides of BDD?
- What shortcomings in process have you encountered, and how would you improve them?
- How do you balance full coverage of all OS/browsers with how long the test suite takes?

Password Storage

- Hash functions (MD5, SHA1, SHA-512, BCrypt)
- Iterative hashing
- Salt
- Pepper
- Avoiding passwords in the clear in server logs
- Hacking: rainbow tables, GPUs, cloud