CS142-Cheatsheet

html and css

- Hello World

```
<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
xml:lang="en" lang="en">
  <head>
    <title>Hello World</title>
  </head>
  <body>
    <p>Hello world!</p>
  </body>
</html>
```

- Start tag contain attributes

```
<img src="face.jpg">
<input type="text" value="94301" name="zip">
<div class="header">
```

- Include as a link:

```
<link rel="stylesheet" type="text/css" href="myStyles.css" />
```

- Include in the body

```
<style type="text/css">
    body {
        font-family: Tahoma, Arial, sans-serif;
        ...
    }
</style>
```

URLs

- Multi-level escaping:
  `<a href="/a/b/c?name=C%26H%20Sugar&year=2006">`

Ruby Laguage

- **Scope** local: foo, global: $foo; instance variable: @foo; class variable: @@foo;

- single quote : %q<Nesting works: Hello>

- hashes: order = {"item" => "Corn Flakes", "weight" => 18}
  or order = {item: "Corn Flakes", weight: 18}

- **Append to a list** @primes << candidate

- Module Example

```
class MyClass
  include Enumerable
  ...
  def each
    ...
  end
  def <=>
    ...
  end
end
```

- **Many Arguments:**

```
def max(first, *rest)
  result= first
  for x in rest do
    if (x > result) then
      result= x
    end
  end
  return result
end
```

- **Iterators and Resuable**

```
 def sum_odd(count)
    sum = 0
    odd_numbers(count) do |i|
        sum += i
    end
    return sum
```

```
end

def odd_numbers(count)
    number = 1
    while count > 0 do
        yield(number)
        number += 2
        count -= 1
    end
end
```
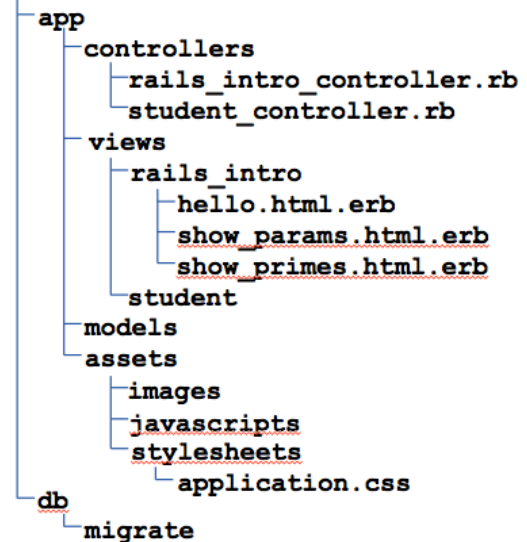
- **Class**

```
class Point
  def initialize(x, y)
    @x = x
    @y = y
  end

  def x
    @x
  end

  def x=(value)
    @x = value
  end
end
```

Rails

- **Rails Structure:**

CS 142 Lecture Notes: Rails Controllers and Views

- **Partial Page:**

  `<%= render(:partial => "shared/foo",`
  `:locals => {:x => 24, :y =>36}) %>`

- **Helper Functions**

  `<%= link_to(@name, {:action => :user_info, :id => @user_id}) %>`
  `<%= image_tag "icon.jpg" %>`
  `<%= stylesheet_link_tag "main" %>`
  `<%= javascript_include_tag "file1", "file2" %>`

SQL

- **Create a table**

```
CREATE TABLE students (
    id INT AUTO_INCREMENT,
    name VARCHAR(30),
    birth DATE,
    gpa FLOAT,
    grad INT,
    PRIMARY KEY(id));
```

- **Add Rows**

```
INSERT INTO students(name, birth, gpa, grad)
    VALUES ('Anderson', '1987-10-22', 3.9, 2009);
```

- **Delete and Drop Tab**

```
DELETE FROM students WHERE name='Anderson';
DROP TABLE students;
```

- **Some Select Update Example**

```
SELECT gpa, name, grad
    FROM students
    WHERE gpa > 3.0
    ORDER BY gpa DESC;
 UPDATE students
    SET gpa = 2.6, grad = 2013
    WHERE id = 2;
```

- **Joins**

```
SELECT s.name, s.gpa
    FROM students s, advisors p
    WHERE s.advisor_id = p.id AND p.name = 'Fujimura';
```

- **Mega Example**

```
SELECT s.name, c.quarter
    FROM students s, courses c, courses_students cs
    WHERE c.id = cs.course_id AND s.id = cs.student_id
    AND c.number = 'ART101';
```

Active Record

- **Basic Operations**

```
student = Student.find(187)
student = Student.find_by_name("Hernandez")
smarties = Student.find(:all,
        :conditions => "gpa >= 3.0")
smarties = Student.find(:all, :limit => 10,
        :order => "gpa DESC")
Student.find(187).destroy()
```

- **One to Many, Many to Many**

```
class Student < ActiveRecord::Base
    has_and_belongs_to_many :courses
end
class Course < ActiveRecord::Base
    has_and_belongs_to_many :students
end

--------------------------------------
class Student < ActiveRecord::Base
    has_and_belongs_to_many :courses
end
class Course < ActiveRecord::Base
    has_and_belongs_to_many :students
end
```

- **Create Table**

```
class CreateStudents < ActiveRecord::Migration
    def change
```

```
    create_table :students do |t|
        t.column :name,         :string
        t.column :birth,        :date
        t.column :gpa,          :float
        t.column :grad,         :integer
        end
    end
end
```

- **Add Columns**

```
class AddAdvisor < ActiveRecord::Migration
    def change
        add_column :students, :advisor_id, :integer
    end
end
```

http and https

```
GET /index.html HTTP/1.1
Host: www.example.com
User-Agent: Mozilla/5.0
Accept: text/xml,application/xml,application/xhtml+xml,text/html*/*
Accept-Language: en-us
Accept-Charset: ISO-8859-1,utf-8
Connection: keep-alive
<blank line>

---------------
HTTP/1.1 200 OK
Date: Thu, 24 Jul 2008 17:36:27 GMT
Server: Apache-Coyote/1.1
Content-Type: text/html;charset=UTF-8
Content-Length: 1846

<?xml version="1.0" encoding="utf-8"?>
<!DOCTYPE html PUBLIC ... >
<html ... >
...
</html>
```

Cookies Sessions

```
Set-Cookie: session=0x4137fd6a; Expires=Wed, 09 Jun 2012 10:18:14 GMT
Cookie: session=0x4137fd6a
```

Forms

- **Form html**

```
<form action="/product/update" method="post">
  Product: <input type="text" name="product"/><br />
  Price: <input type="text" name="price" value="49.95"/><br />
  <input type="submit" value="Submit"/>
</form>
```