

Intro to Ruby

For the non-programmer

Some Programming Fundamentals

Keeping track of things
“Variables”

```
my_name = "Johnny"
my_age = 33
age_of_my_bro = my_age - 12

puts "My name is #{my_name}"
=> My name is Johnny

puts "I am " + my_age + " and my brother is #{age_of_my_bro}"
=> I am 33 and my brother is 21
```

```
current_time = Time.now  
=> 2013-06-22 04:42:48 -0400
```

```
current_time = Time.now  
=> 2013-06-22 04:43:52 -0400
```

Making Decisions

“Conditionals” aka “Control Structures”

```
my_name = "Ted"

if (my_name == "Johnny")
  puts "Hey Johnny!"
elsif (my_name == "James")
  puts "Go away James."
else
  puts "Hello #{my_name}."
end
```

```
my_name = "Johnny"
```

```
puts "Hey Ted" unless (my_name != "Ted")
```

```
=> nil
```

Iterating Over Lists

“Looping Constructs” and “Arrays”

```
my_array = [1, 2, 3]
```

```
my_array.each do |num|  
  puts num  
end
```

```
1  
2  
3  
=> [1,2,3]
```

Some Advice

Programming & Cooking

More in common than you might think

Programming
is like
following a
recipe

BUTTERSCOTCH SNAPS

Preheat oven to 350°F.

SIFT together and set aside

2 c. sifted flour

2 tsp. baking soda

¼ tsp. salt

MELT over hot (not boiling) water

1 6-oz. pkg. (1 c.)

Butterscotch Morsels

Remove from water

COMBINE and beat till creamy

½ c. sugar

⅓ c. butter or shortening

3 tbs. light corn syrup

BEAT in

1 egg

STIR in

Melted butterscotch

ADD

Flour mixture

Form in 1" balls

ROLL in

Granulated sugar

Place on greased cookie sheet

BAKE at: 350°F.

TIME: 10 min.

Ingredients

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Place on greased cookie sheet

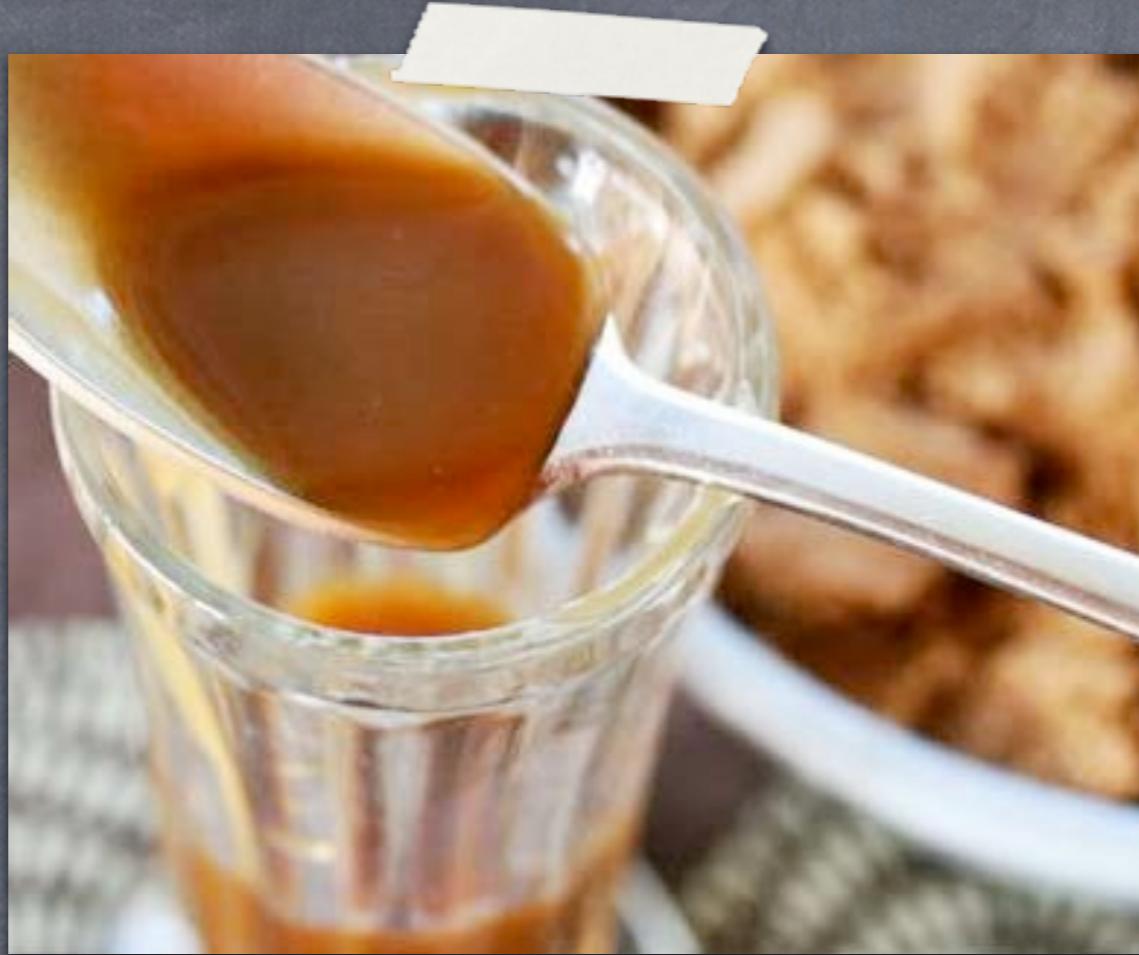
BAKE at: 350°F.

TIME: 10 min.

Instructions

BUTTERSCOTCH SNAPS

- Preheat oven to 350°F.
- SIFT together and set aside
 - 2 c. sifted flour
 - 2 tsp. baking soda
 - ¼ tsp. salt
- MELT over hot (not boiling) water
 - 1 6-oz. pkg. (1 c.) Butterscotch Morsels
- Remove from water
- COMBINE and beat till creamy
 - ½ c. sugar
 - ⅓ c. butter or shortening
 - 3 tbs. light corn syrup
- BEAT in
 - 1 egg
- STIR in
 - Melted butterscotch
- ADD
 - Flour mixture
- Form in 1" balls
- ROLL in
 - Granulated sugar
- Place on greased cookie sheet
- BAKE at: 350°F.
- TIME: 10 min.



If all goes well

All recipes are based
on the same template
and have in common:

- a name
- one or more ingredients
- one or more instructions

This is a butterscotch
snaps recipe based on
the recipe template



BUTTERSCOTCH SNAPS

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2 tsp. baking soda

¼ tsp. salt

MELT over hot (not boiling) water

1 6-oz. pkg. (1 c.)

Butterscotch Morsels

Remove from water

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½ c. sugar

⅓ c. butter or shortening

3 tbs. light corn syrup

BEAT in

1 egg

STIR in

Melted butterscotch

ADD

Flour mixture

Form in 1" balls

ROLL in

Granulated sugar

Place on greased cookie sheet

BAKE at: 350°F.

TIME: 10 min.

Using programming terms...

All recipes are based
on the same **class** and
have in common:

- a **name**
- one or more **attributes**
- one or more **methods**

This is an **instance** based
on the butterscotch
snaps recipe **class**



BUTTERSCOTCH SNAPS

Preheat oven to 350°F.

SIFT together and set aside

2 c. sifted flour

2 tsp. baking soda

1/4 tsp. salt

MELT over hot (not boiling) water

1 6-oz. pkg. (1 c.)

Butterscotch Morsels

Remove from water

COMBINE and beat till creamy

1/2 c. sugar

1/3 c. butter or shortening

3 tbs. light corn syrup

BEAT in

1 egg

STIR in

Melted butterscotch

ADD

Flour mixture

Form in 1" balls

ROLL in

Granulated sugar

Place on greased cookie sheet

BAKE at: 350°F.

TIME: 10 min.

In Ruby terms...

name

attributes

```
class ButterscotchSnapsRecipe
```

```
attr_accessor :sifted_flour, :baking_soda...
```

```
def add
```

```
...  
end
```

```
def stir
```

```
...  
end
```

```
def bake(how_long)
```

```
...  
end
```

```
...  
end
```

```
end
```

class, attr_accessor, def and end are all “keywords” of the Ruby language or “syntax”

```
class ButterscotchSnapsRecipe
  attr_accessor :sifted_flour, :baking_soda...
  def add
  ...
end

def stir
  ...
end

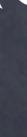
def bake(how_long)
  ...
end

...
end
```

```
my_recipe = ButterscotchSnapsRecipe.new
```

a **variable** containing an **instance** of the
ButterscotchRecipe class

argument



But what if I want a
ButterscotchPuddingRecipe? Do I
have to repeat some of the same
behaviors already in my
ButterscotchSnapsRecipe?

Glad you asked.

Shared behaviors

BUTTERSCOTCH SNAPS

Preheat oven to 350°F.

SIFT together and set aside

2 c. sifted flour

2 tsp. baking soda

¼ tsp. salt

MELT over hot (not boiling) water

1 6-oz. pkg. (1 c.)

Butterscotch Morsels

Remove from water

COMBINE and beat till creamy

½ c. sugar

⅓ c. butter or shortening

3 tbs. light corn syrup

BEAT in

1 egg

STIR in

Melted butterscotch

ADD

Flour mixture

Form in 1" balls

ROLL in

Granulated sugar

Place on greased cookie sheet

BAKE at: 350°F.

TIME: 10 min.

How can all my recipes
share those behaviors?

We'll create a new **class**

```
class Recipe
```

```
def add  
...  
end
```

```
def stir  
...  
end
```

```
def combine  
...  
end
```

```
...  
end
```



Shared behaviors

“child” class

is a “sub-class of”

“parent” class

```
class ButterscotchSnapsRecipe < Recipe  
attr_accessor :sifted_flour, :baking_soda...
```

```
def bake(how_long)  
...  
end
```

...

```
end
```

```
my_snaps_recipe = ButterscotchSnapsRecipe.new
```

We say that ButterscotchSnapsRecipe “inherits” from and “is a” Recipe. As such, it inherits the same behaviors as the parent Recipe class.

```
class ButterscotchPuddingRecipe < Recipe
  attr_accessor :whole_milk, :brown_sugar...
  def freeze(how_long)
    ...
  end
  ...
end

my_pudding_recipe = ButterscotchPuddingRecipe.new
```

You've just learned the basics of
“Object Oriented Programming”

More Advice

Thanks and let's get to work.

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