Quick Assignment Review

Chapter 4 and 5 - Ruby Basics

Task #4 Equation

$$Monthly\ Payment = \frac{Loan\ Amount * (r/n)}{\left(1-\left(1+\frac{r}{n}\right)^{-n*t}\right)}$$

r = interest rate
n = payments per year
t = number of years

Task #4 Equation

```
principal = 233000
months_in_a_year = 12
interest = 3.75 / 100 / months_in_a_year
number_of_payments = 12*30

monthly_cost = principal*(interest*(1+interest)**number_of_payments)/
((1+interest)**number_of_payments-1)

monthly_cost = monthly_cost.to_i
```

Methods

Chapter 4 - Ruby Basics

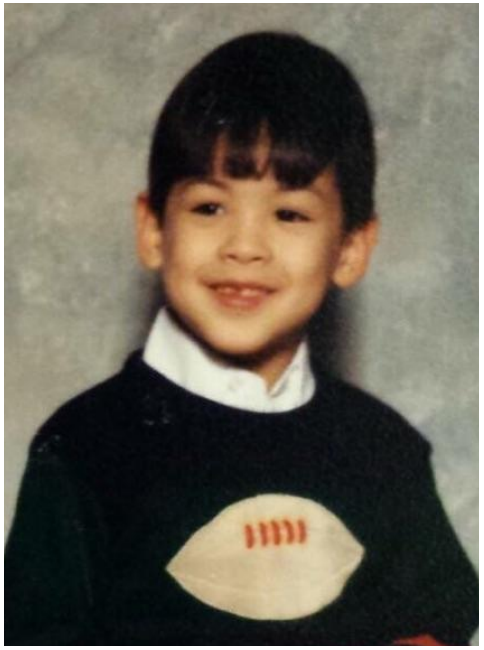
Objects

Objects are values or items

Everything in Ruby is an object. Objects have properties and can take actions.

Lou is an object. He has height, weight, eye color, hair color.

lou.hair_color = 'brown'



Methods

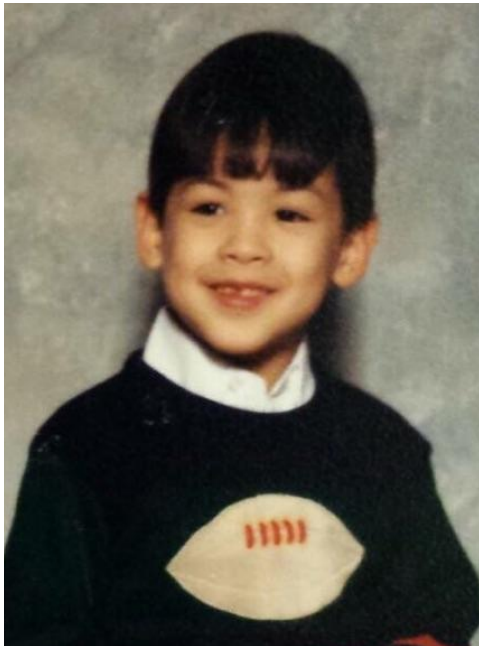
Methods are things that do something to an object

Methods are how things are changed in the system. Methods can also accept parameters to be used inside the method. Method signatures are what the program is expecting to be passed in its parameters.

A Lou method for throwing might have a signature of

method kick(kicked_object, kicking_object, time_of_kick)

lou.kick(ball, left_foot, '13:00 hours')



String Method Examples

```
my_variable = ‘Rob’
puts my_variable.reverse
puts my_variable.downcase

new_variable = ‘stiney’
new_variable = new_variable.capitalize
puts new_variable.swapcase
```

String Formatting

- center, ljust, and rjust are used to do string formatting
  - center method signature
    - center(width_of_line)
- they are all dependent on the width of the line you pass the method
- they create new strings with spaces padded around the original string value

Math Methods

Chapter 4 - Ruby Basics

Exponent

- Raising a value by the power of another power
- This is done with the ** operator

```
my_variable = 2
my_variable = my_variable ** 2
puts my_variable
```

Modulus

- Gives you the remainder after doing the division of two numbers
- This is done with the % operator
- Done with integers

```
number_of_cookies = 25
number_of_children = 4
cookies_per_child = number_of_cookies / number_of_children
remaining_cookies = number_of_cookies % number_of_children
puts  cookies_per_child
puts remaining_cookies
```

Random Numbers

- Used to generate random numbers
- Calling rand without a parameter gives a number between 0 and 1.0
- Calling rand with a parameter gives you a random number between 0 and one less than the parameter (the reason is because 0 is a number

```
# need a random number between 0 and 10
my_random = rand(11)
```

- To get the same random numbers on a second run, you srand to seed the number set

Math Constants

- The MATH object is very powerful, and gives you access to every math method you would need like a scientific calculator

```
puts (Math::PI)
puts (Math::E)
puts (Math.sqrt(4))
```

Next week, remote remote

WHAT WHY WHERE WHEN WHO HOW