CS 302: Computer Fluency

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Announcements

- Homework 1 has been graded!
- Homework 2 is due today 5PM
- **First midterm is September 28th, Monday**
- Learn to Program!: **http://www.codecademy.com/**
- Project Euler
- Code Chef
- **http://norvig.com/21-days.html**

Modules

Modules (or functions) are basically mini-programs, and in a way black boxes

Example

Set coffee = make_me_coffee(intern)

We don't know anything about the make_me_coffee, yet it magically works

How to use modules

In most programming languages, functions are called like:
function_name (parameters…)

Where a parameter is an input to the function

Why use modules?

- Easier to write
- Shorter, cleaner code
- More general
- Layer of abstraction

Good software design

- Focus on making things reusable
- Never reinvent the wheel
- Use what you can, make what you can't
- Be modular
- And much much more!

Refactoring

- Refactoring basically means revising
- Improving, simplifying code
- **Really important**
- Let's try!
- https://www.codehunt.com/

Using modules

As mentioned before, modules are a key part of refactoring and help simplify otherwise complex pieces of code

Let's try an example!

Exercise 1

Suppose that you have a name and
you want to figure out if the name is a palindrome.

A palindrome is a sequence of letters (and numbers)
that is the same if read forwards and backwards.

You're given the module reverse, which reverse's the name
and equal, which compares the two names

Exercise 2

Suppose that you want to find out the smartest person in your recruitees.

You're given a list of people's names and their IQs (sorry!)

You're also provided a module max, which returns the max value of the list.

Exercise 3

A common problem in Computer Science is searching.

Imagine you have a directory and you want to look up
a certain restaurant by Rating, Location, and Pricing.

You're given the list of all directories,
the rating, location, and pricing as parameters.

You're given a module search, which finds elements in list that
correspond to the parameters. Note that this function can also
returns a list.

Contact

- My office hours are from 1-3PM in GDC 1.302
- Email: pbae@utexas.edu
- Slides: https://github.com/pybae/slides