CIS 196 FAQ

General
- Window laptops
  1. What do I do if I only have a Windows computer?
     a. [https://www.seas.upenn.edu/~cis196/VM](https://www.seas.upenn.edu/~cis196/VM) has detailed instructions. In short, either try to load Linux on a Virtual Machine (VM) or dual boot Linux on your computer.

- Rubocop
  1. If Rubocop finds 0 violations, does that guarantee full credit for the Style and Best Practices portions of our homework grade?
     a. It guarantees you will get a perfect score for Style, but a TA will manually inspect your code for Best Practices.
  2. Rubocop gives a warning for methods longer than 10 lines. Should all methods have fewer than 10 lines?
     a. Yes. Defining helper methods will help reduce the number of lines.
  3. Rubocop Offense: Assignment Branch Condition size (ABC size)
     a. [https://github.com/bbatsov/rubocop/blob/master/lib/rubocop/cop/metrics/abc_size.rb#L7](https://github.com/bbatsov/rubocop/blob/master/lib/rubocop/cop/metrics/abc_size.rb#L7) is a link to Rubocop’s documentation for the offense.
  4. I got a Rubocop error that says to use "next" instead of "each" to skip iteration. What does that mean?
     a. It probably means you have one big `if` statement inside an `each` iterator, which causes unnecessary indenting. Instead, call `next` when the opposite of the condition for that `if` statement occurs.

- Best Practices
  1. What kind of violations would deduct Best Practices points?
     a. It would be difficult to list all possible scenarios, but some common ones include:
        - nested if statements with no else statement
        - unnecessary explicit returns
        - unnecessary increases in variable scope

- Versions
  1. How do I check which version of Ruby and Rails I have?
     a. Type “ruby -v” and “rails -v” in the command line.

- Common Errors
  1. undefined method `method_name(possible arguments)` Error
     a. In this case, chances are high that the method itself is not defined in the method’s scope, which may generally happen in two cases.
        i. You really have not implemented it yet.
        ii. You did, but there is still this error. Check the spelling of the method, location of the method (in the right scope), and the number of parameters in your implementation and usage of the method.
  2. Crashing at Submission
a. If `workspace/spec/spec_helper.rb:3:in `require': cannot load such file -- “File
Path” (LoadError)´ type of error occurs, make sure that you followed our
instructions on submission. You have to zip your app, db, and config directories
into files.zip.

3. **NoMethodError:** undefined method `foo` for nil:NilClass
   a. Basically, you’re calling a method “foo” on an undefined object. For example, if
   you are trying to call `foo` on “bar” (i.e. “bar.foo”), “bar” was never defined (i.e. it’s
   “nil”), and “nil” doesn’t have a method called ‘foo’.

4. SQLite3::SQLException: no such table: table_name: SELECT "table_name".* FROM
   “table_name”
   a. This error message means that the table you are making a query to is non
   existent. Make sure you run `rake db:migrate` before working on your homework
   assignment.

- **BRUCE**
  1. What if my homework works perfectly, but I’m failing tests?
     a. While it is certainly possible there is an error with our tests, they have been
        checked multiple times, so if you can’t figure out what’s wrong, go to office hours to
        have someone look over your code. There is probably an error in your code you’re
        not checking for.

- **Miscellaneous**
  1. Are we allowed to use methods not covered in the lectures?
     a. Yes, unless they have been explicitly restricted.
  2. Are we allowed multiple submissions?
     a. Yes, unlimited submissions are allowed, and only the last one will be graded.
  3. I have a lot of homework for other classes/life, and I don’t think I can finish the homework
     assignment on time. What should I do?
     a. Being late one day (i.e. losing 20%) will not affect you much, so do not stress out
        about it too much. However, you should always feel encouraged to speak to the
        instructor if you need an extension. The worst that will happen is you won’t get one
        (which will happen if you don’t say anything, so the expected value of asking is
        positive).

- **Convention**
  1. Which file should we add our libraries in a Rails app to so that it is accessible throughout
     the app?
     a. We would put it in config/application.rb.
  2. In controller methods, why do we use instance variable(with @) before rendering an erb
     page?
     a. Unless you set your variables as instance variables, you cannot refer to them in
        your view page. It's out of scope. Use local variables (i.e. without @) when you only
        need them in the scope of that controller method.
     b. In other words, if you need those variables only to be used in the scope of your
        controller methods, they don’t have to be instance variables.
  3. What is considered to be a ‘complex query’?
     a. Generally if it’s not ‘all’ or ‘find’, it’s complex
        (e.g. `Class.find_by(id: id).update(attr1: attr1, attr2: attr2)`).
Homework

Homework 1
1. Are we allowed to `require` Ruby’s standard libraries?
   a. Yes, but you do not need to.
2. How do you check if an object is a Boolean?
   a. Ruby does not have a Boolean class. `true` is an instance of `TrueClass`, and `false` is an instance of `FalseClass`. However, chances are you don’t actually have to do this.
3. How do I easily test multiple Ruby methods?
   a. In your terminal, execute `irb`, and you’ll load a REPL with all the standard Ruby methods. Feel free to play with this as much as you want.

Homework 2
1. How do I refer to a class instance variable?
   a. Use a class method.
2. How do I define class methods in modules?
   a. Just define it as a regular instance method but `extend` them in the class you’re mixing into. You do not need to use `self.`.
3. Are we allowed to use class variables (i.e. `@@variable`)?
   a. No, you are not. Use class instance variables instead.

Homework 3
1. In the case of an empty input, should all errors be added?
   a. Yes (e.g. an empty artist name should add the empty artist name error and the not in spotify error).
2. How do we utilize the Spotify API?
   a. You can send requests by passing the url as a string to the `open` method. You can get the result of this request as a hash by passing it as an argument to `JSON.load`. Be sure to require `open-uri` first.
3. How do we iterate through a hash?
   a. You can iterate through a hash with the `each` iterator and get a value in a hash by using its keys. For example, if your hash is called `json_data` and it contains a key `artists`, you can get the value by typing `json_data["artists"]`.
4. Where do we call validator methods?
   a. You should have a validators array with the lambda of each validator. These validators should each be called whenever you call `valid?`.

Homework 4
1. Is there a file specific to every page corresponding to an object?
   a. No. There is one template page (e.g. show.html.erb) that dynamically changes based on each object by using erb (e.g. `<%= @user.name %>`).
2. The page is blank. What’s wrong?
   a. There is probably an error in your controller. Look at your terminal output to figure out what that might be.
3. No such file or directory @ rb_sysopen -... What does this mean?
   a. It means that Sinatra can’t find the file you specified. Look very carefully at the following path since it is probably not the path you intended.
4. Why is the page blank after a POST request?
   a. After a POST/PATCH/DELETE request, instead of rendering a page, you should redirect to
      the appropriate page (e.g. a show page).

Homework 5
1. My replies array doesn’t seem to be populating when I set the parent id for a comments’ reply. Why
   is this?
   a. When you specify a parent id, two things happen. 1: you will be taken to the other get url
      provided, and 2: the post route for creating a comment should consider whether or not a
      parent id was given. If it was, then you should do something with the replies.
2. I can’t get my comments to show up correctly. The nesting won’t work and I’m not sure why.
   a. While we tell you to make a partial and take advantage of that partial, we took away most of
      the content inside the partial. Think about how you can perform a DFS with the comments
      tree (assuming you correctly linked parents and replies) utilizing the partial.
3. I am confused with the complex queries part of the homework assignment. The routes you told us to
   make do not seem like the RESTful routes we learned in class. What is up with these routes and
   how do they relate to complex queries?
   a. The routes /posts/top and /posts/newest are indeed not the standard RESTful routes we
      taught you in class. However, both of these routes are important because the complex
      queries take advantage of each route by creating appropriate variables needed for each
      complex query to succeed, and these unique routes allow the controller to know which
      variables to create.

Homework 6
1. NameError at /courses/5
   uninitialized constant Course::Students
   a. Similar errors would be raised from relationships between related classes (in this case,
      Courses and Students) because they are not well defined. In the example, when visiting
      the ‘show’ page of the course of id 5, your app could not find any relationship between
      Courses and Students when your app is asked to list all the students that belongs to this
      course(id:5) Make sure everything in your model files for each class is correct. Even ‘s’s at
      the end of class names could cause trouble.
2. rake db:seed aborts Error
   rake aborted!
   ActiveRecord::UnknownAttributeError: unknown attribute 'course' for Review
   a. The above error (and everything on the same line) has the same issue as question number
      1. In this case, there’s no relationship between the Reviews class and Courses class yet.
      Make sure that you finish up your ‘model’ part of the assignment before you ‘rake db:seed’
3. How do I know when the validation doesn’t pass?
   a. Validations will be run (assuming you set things up correctly in model), when you create,
      save(after new) and update an instance. If a validation fails, those methods will return false,
      otherwise true.
4. ‘Student has already been taken’ error or errors on similar lines.
   a. You’re probably trying to recreate an already-existing instance of the model.
   b. Or you are not clearing your database properly (this indicates that your delete/destroy
      method is not working properly). The tests on BRUCE don’t reconstruct the database every
time, and if you’re not deleting correctly, CoursesStudent will still contain references to previously created instances.

5. Unable to find x (either buttons or fields) error.
   a. Make sure that for each page you have all the tags with a `name` attribute set to that value the tests are looking for (e.g. `content`).
   b. If you get a lot of them at once, make sure that the pages are loaded correctly (returning 200, not 500 status codes, etc). If the page itself is not loaded, obviously those fields/buttons won’t be there.

6. StudentsCourse #delete #delete_from_courses_page does not have the title of the course in student profile page
   Failure/Error: within '#courseList' do
   Capybara::ElementNotFound:
     Unable to find css "#courseList"
   a. This is also of a similar character as above. You are not responsible for any html/css factors which means this type of error will only happen when the page is not loaded correctly. Make sure that your delete (or any related) methods’ functionality and redirecting are done correctly.

Homework 7
1. Will Rubocop be used? A lot of the Rails scaffold code is raising offenses.
   a. Yes, it will, but we will be ignoring the Rails scaffold code.

2. Why isn’t ‘get ’/’ do end’ working?
   a. Rails doesn’t use the Sinatra syntax to define routes. The routes are handled by the `config/routes.rb` file and your controller.

3. How do I debug my app on Heroku?
   a. Run `heroku logs` to get the most recent log entries from your app.

Homework 8
1. How do we use BCrypt? Should we be using has_secure_password?
   a. You should follow the documentation to include password and password= methods in your User model. Your user table should include a column for password_hash, but user_params should take in password instead of password_hash. You should not be using has_secure_password at all.

2. How do we handle a user logging in?
   a. Be sure to refer to the slide deck. This should be handled in the Sessions controller, with the create method. Logging out should be handled in the destroy method in the Sessions controller.

3. Do we use nested attributes to relate a user to a status?
   a. No, you should not be using nested attributes. Instead use the belongs_to/has_many relationship.

Homework 9
1. WebMock::NetConnectNotAllowedError:
   Real HTTP connections are disabled. Unregistered request: GET
   https://api.spotify.com/v1/search?q=Justin%20Bieber%20&type=track with headers {’Accept’=>”/*”,
   ’Accept-Encoding’=>”gzip;q=1.0,deflate;q=0.6,identity;q=0.3’, ’User-Agent’=>”Ruby”}
a. This error indicates you are making an improper url request. Check the way you format the url.

2. I am confused as to what exactly get_spotify_uri does, more specifically, what we are iterating through in this method.
   a. You are iterating through the JSON from the Spotify API. This method finds the uri for the song or artist you are looking for. The uri allows you to play music from your webpage.

3. How can you access a certain part of the params? Is params represented as a hash?
   a. Params is a hash. Depending on how the data is nested, you will have to access different values differently.

4. If we don't find the artist whose id is in song_params, what name do we give to the new artist that we have to create?
   a. You can only make a song from an artist. If there isn't a valid artist name, the name should be nil and you should not be able to create a song.

5. Should the artist_search method be a class method that takes in a string. Then go through the string and replace spaces with +?
   a. `artist_search` should be an instance method. It doesn't need to accept a string but should be able to return the name with spaces as `+`.

6. I am confused by this line in the directions for updating routes: 'you should create a new route in the SongsController where the all action handles a GET request to /songs.' Isn't this already what is happening in the songs' `index` route?
   a. `Song`'s index will display the songs specific to each artist. `Song`'s all will display every song. Your error most likely stems from the fact that `songs_path` is nested within artist.
   b. To check which paths are defined, use `rake routes`.

7. I'm confused about what the add_song method does exactly, and how it's supposed to function. Is it a helper method for creating a new song for the current artist?
   a. Exactly! This is a helper function for the `create` route. You are also checking if a song was created at the same time as the artist.

8. When we instantiate an artist we are supposed to do some validation, how do we do this if the Artist is an active record?
   a. Active Record gives you a couple basic validators out of the box, so you may use those. [http://guides.rubyonrails.org/active_record_validations.html#presence](http://guides.rubyonrails.org/active_record_validations.html#presence)

9. Spotify classifies artist_id as a 62-bit integer. For our model, should we use artist_id:string for this?
   a. You do not want to pull artist_id from Spotify. This will be the foreign key for the song class. Those two are completely different.

10. I am confused about how we utilize the Spotify API. Do the 'get track' and 'get artist' request live data from our controllers?
    a. You send your own GET requests with the `open` method. You just put the url as a string as an argument to that method. You can use the result of the GET request as a hash by passing it into `JSON.load`.

11. `rake db:migrate` is not working (due to any kind of gem version issue)
    a. Try running `bundle exec rake db:migrate` to specify the versions of the gems you want to use via the Gemfile, especially if you see an error message similar to: "you have already activated rake 11.1.1, but your Gemfile requires rake 10.5.0. prepending 'bundle exec' to your command may solve this."