

1.) What paths (HTTP verb and URL) will be defined by the following snippet in config/routes.rb?

```
config/routes.rb?  
resources :posts do  
  member do  
    get 'comments'  
  end  
  collection do  
    post 'bulk_upload'  
  end  
end
```

2.) What is the difference between Ruby's Hash and ActiveSupport's HashWithIndifferentAccess?

3.) What's the problem with the following controller code? What would be the consequence of leaving this code in a production app? How would you fix it?

```
class MyController < ApplicationController  
  def options  
    options = {}  
    available_option_keys = [:first_option, :second_option, :third_option]  
    all_keys = params.keys.map(&:to_sym)  
    set_option_keys = all_keys & available_option_keys  
    set_option_keys.each do |key|  
      options[key] = params[key]  
    end  
    options  
  end  
end
```

4.) What is CSRF? How does Rails protect against it?

5.) How would you define a Person model so that any Person can be assigned as the parent of another Person (as demonstrated in the Rails console below)? What columns would you need to define in the migration creating the table for Person?

```
irb(main):001:0> john = Person.create(name: "John")  
irb(main):002:0> jim = Person.create(name: "Jim", parent: john)  
irb(main):003:0> bob = Person.create(name: "Bob", parent: john)
```

```
irb(main):004:0> john.children.map(&:name)
=> ["Jim", "Bob"]
```

And for a more advanced challenge: Update the Person model so that you can also get a list of all of a person's grandchildren, as illustrated below. Would you need to make any changes to the corresponding table in the database?

```
irb(main):001:0> sally = Person.create(name: "Sally")
irb(main):002:0> sue = Person.create(name: "Sue", parent: sally)
irb(main):003:0> kate = Person.create(name: "Kate", parent: sally)
irb(main):004:0> lisa = Person.create(name: "Lisa", parent: sue)
irb(main):005:0> robin = Person.create(name: "Robin", parent: kate)
irb(main):006:0> donna = Person.create(name: "Donna", parent: kate)
irb(main):007:0> sally.grandchildren.map(&:name)
=> ["Lisa", "Robin", "Donna"]
```

6.) Create a route to be able to display pages with different information about different types of beer. The route should recognize URL paths like /beer/<beer_type> and should use the same controller action for each type of beer with the actually beer type passed into the controller action as a parameter. The valid beer types are:

- IPA
- brown_ale
- pilsner
- lager
- lambic
- hefeweizen

Any other type of beer specified should generate a 404 status code.

7.) What's the issue with the controller code below? How would you fix it?

```
class CommentsController < ApplicationController
  def users_comments
    posts = Post.all
    comments = posts.map(&:comments).flatten
    @user_comments = comments.select do |comment|
      comment.author.username == params[:username]
    end
  end
end
```