

**Practice Quiz 1 for IT 232**

Spring 2013

Assume the model schema and contents listed below.

The airports table has the following records:

id	name	code	flights	city_id
1	O'Hare	ORD	882000	1
2	Midway	MDW	250000	1
3	Benito Juárez	MEX	378000	4
4	Heathrow	LHR	475000	2
5	JFK International	JFK	409000	3
6	LaGuardia	LGA	362000	3

The cities table has the following records:

id	name	population	country
1	Chicago	3000000	USA
2	London	8000000	UK
3	New York	8000000	USA
4	Mexico City	8800000	Mexico

Also assume that the Airport and City models have been declared so that an airport belongs to a city and that a city has many airports.

1. Provide the values of the following Ruby expressions:

a. `City.find(2).name`

**"London"**

b. `Airport.find_by_code('MDW').city.country`

**"USA"**

c. `City.where('population > ?', 4000000).count`

**3**

2. Write ruby statements or expressions that perform the following database queries. Your answers should work for any valid content stored in the airports and cities table.

- a. Expression that provides the name of the city whose id is 2.

```
City.find(2).name
```

- b. Expression that provides the name of the city whose airport has the name “Heathrow”.

```
Airport.find_by_name("Heathrow").city.name
```

OR

```
Airport.where(:name=>"Heathrow").first.city.name
```

*Note: the **where** method returns an array, but the **city** method requires a single element. You can get the single element by getting the first element from the array using the **first** method.*

- c. Expression that provides an array of airport objects that belong to the city of New York.

```
City.find_by_name("New York").airports
```

*Note: as before the **where** method with **first** can be used, this time to obtain the New York city object.*

- d. Expression that provides the number of cities with country name of “USA”.

```
City.find_all_by_country("USA").count
```

OR

```
City.where(:country => "USA").count
```

- e. Expression that provides the number of airports that belong to the city of London.

```
City.find_by_name("London").airports.count
```

- f. \*\*\* Extra Challenging \*\*\* Expression that provides the array of airport codes (array of strings) for airports with more than 300,000 flights.

```
Airport.where("flights > 300000").collect {|ap| ap.code}
```

3. The following code appears in a view for Rails:

```
<h1>Listing</h1>

<%
  list = Airport.where("flights > 400000")
%>

<ul>
  <% list.each do |item| %>

    <li><%= item.code %> - <%= item.city.name %></li>

  <% end %>
</ul>

<p>There are <%= list.length %> major airports.</p>
```

Below, draw how this view would appear in a web browser.

## Listing

- ORD - Chicago
- LHR - London
- JFK - New York

There are 3 major airports.

Here is another view:

```
<h1>List Airports by City</h1>

<%= form_tag list_by_city_airports_path, :method => :get do %>

  <p>
    <%= label_tag :city_name %>
    <%= select_tag :city_name,
                  options_for_select(
                    City.all.collect { |city| city.name },
                    params[:city_name] ) %>

  </p>
  <p>
    <%= submit_tag 'Find Airports' %>
  </p>

<% end %>
```

Draw how this view would appear:

## List Airports by City

City name

What parameter does this form submit?

**:city\_name**

4. Write controller code that runs when the form from the previous page is submitted. Your controller code should use the submitted city name to find all airport objects that belong to it. The array of resulting airport objects should be assigned to the variable `@airports`.

```
def list_by_city

  if params[:city_name]
    city = City.find_by_name(params[:city_name])
    @airports = Airport.where(:city_id => city.id)
  end
end

end
```

Hint: the ruby expression for getting the value of the city name from the form is `params[:city_name]`

5. The following is a list of events that occur when a request is made to a Rails application. The events are not listed in order. Indicate the correct order by placing numbers in the blanks before each event. (the first and last events are already numbered for you) (5 points)

- \_7\_ The rendered page is returned to the web browser.
- \_3\_ The controller's show method is called.
- \_1\_ The user clicks on a link that sends a GET request to the web server.
- \_4\_ A find method retrieves an ActiveRecord object from the database.
- \_6\_ The view file inserts dynamic content into a formatted template.
- \_2\_ The routing system parses the requesting URL.
- \_5\_ The controller saves dynamic content in an instance variable.