**LSP 121 – Midterm Exam  
October 5, 2010**

**Part A. Computer Problems.** Create Rails items according to these specifications. Submit this project in a zip file on the COL website.

1. (5 points) Create a Rails project named Library.
2. (10 points) Using the scaffold software, create a project that manages Book objects in a library. Keep track of these fields for each book: author (string), title (string), Dewey Decimal Number (decimal), whether or not the book is checked out (Boolean), year (integer). Don’t forget to issue **rake db:migrate**
3. (5 points) Start the server and test the Library project. Add two books to the database.
4. (5 points) Add the **books.jpg** image to each view in the project using the helper method **image\_tag**. You can accomplish this by adding the image once to the layout file, or you can add the image to each of the four views separately.
5. (20 points) Modify the **scaffold.css** file in **public/stylesheets** to do the following:  
   a. Set the background color of the body silver.  
   b. Set the text color of the body maroon.  
   c. Set the font of the body to Papyrus.  
   d. Set the size of the image that you added in Part 4 to width=1.5 inches, height = 1.0 inches.
6. (15 points) Add a new controller to the Library project named Recommended. It should have one action named show that shows the output from the Ruby code in **recommend.rb**. Place this Ruby code in the show method of the controller and modify it so that the two randomly recommended books are displayed on the show page.
7. (5 points) Attach the **scaffold.css** style sheet in 5 to the new page in 6 using the helper method **stylesheet\_link\_tag**.

**Part B: Multiple Choice Questions.** Choose the correct answer for each question. Give an optional reason for each answer. 5 points each. Do only 15 out of 16 questions.

1. Which of the following is NOT required in an XHTML file?  
   a. An XHTML validation header.  
   b. Attribute values must be in double quotes.  
   c. Tag names must be spelled in upper case.  
   d. Tags must be nested.
2. What is a CSS class?  
   a. The set of images in **/public/images**.  
   b. The set of input tags in the view.  
   c. The set of HTML tags in the body section of the page.  
   d. A user defined set of properties and values that can be used to set the style for HTML   
    elements.
3. Which of the following is **NOT** a server-side programming language?  
   a. ASP.Net b. JavaScript c. PHP d. Ruby on Rails
4. What is the Ruby symbol for comment?  
   a. **<!--**  b. **#**  c. **//** d. **/\***
5. What is a controller?  
   a. A collection of Ruby script files. b. A DOS command.  
   c. An HTTP routing destination. d. A Ruby class containing one method for each action.
6. What does this command line statement do?  
   **rake db:migrate**  
   a. Creates a complete HTML file from a view file.  
   b. Implements the specifications generated by the previous migrate statement.  
   c. Removes all improper scripts in a project.  
   d. Updates the timestamps for all database rows.
7. What does this Ruby statement do? **yield :layout**a. Gives the index view (if one exists) priority over the current view.  
   b. Places the proper view code within a layout.  
   c. Stops the execution of the current controller.  
   d. Switches to a different controller.
8. Which of these is **NOT** an HTTP command?  
   a. **DELETE** b. **GET** c. **LIST** d. **POST**
9. What is the default port for HTTP?  
   a. 80 b. 1023 c. 3000 d. 5000
10. What is a resource?  
    a. A database table that is created by the controller.  
    b. A piece of information that is accessed or otherwise processed by a Rails project.  
    c. Images that are stored in the public folder.  
    d. Text that is displayed on the views.
11. Which layer of the 7-layer OSI Model specifies the characteristics of the wires that connect the hosts in a local area network to switches and routers.  
    a. Application b. Data Link c. Physical d. Transport
12. At which layers of the 7-layer OSI Model do the TCP and IP protocols operate?  
    a. Transport and Network b. Data Link and Network  
    c. Network and Data Link d. Session and Application
13. If these Ruby statements are executed today (October 12, 2010), what is the output?  
    **a = Time.now  
    b = a.mon  
    c = a.day  
    puts c + " " + b**  
    a. **10 12** b. **12 10** c. **1012** d. **1210**
14. Which Ruby statement randomly assigns n to 10 or 20 with equal probability?  
    a. **n = 10 + rand(20)** b. **n = 10 + 10 \* rand(2)**  
    c. **n = 10 \* (1 + rand(1))** d. **n = 10 \* (1 + rand(21))**
15. What is the meaning of **=** in Ruby?  
    a. Assigns the value of an expression to a variable.  
    b. Checks whether two objects are equal.  
    c. Used to evaluate a method in the controller.  
    d. Used to solve a mathematical equation.
16. What are the possible return values from the **<=>** operator method:  
    a. **true** or **false** b. **true**, **false**, or **nil** c. **0** or **1** d. **-1**, **0**, or **1**