

1 Homework 3

Due Date: Nov 14; To be turned in on paper in class.

Important Reminder: As per the course [Academic Honesty Statement](#), cheating of any kind will minimally result in receiving an F letter grade for the entire course.

Please remember to justify all answers.

You are encouraged to use the web or the library but are required to cite any external sources used in your answers.

1. The mustache template given in the [recursive.js](#) example discussed in class depends on one of the bad parts of JavaScript and would not work in other languages like Ruby. Identify why that is so and how would you fix it to remove the problem? *15-points*
2. When search terms include noise words in [Project 4](#), those noise words are also highlighted in successful results.
 - (a) Is this a bug or a feature?
 - (b) What changes would you need to make in the overall setup for projects 3 and 4 to ensure that noise words are not highlighted in successful results? *15-points*
3. The last route used for the [users application](#) has a comment *//must be last*. Discuss why this is so. What changes would you make to avoid such ordering requirements? *10-points*
4. Discuss how you would design RESTful web services for recording and retrieving student grades for a typical university. Specifically, your discussion should include the following:
 - Details of the data model including support for different grading policies for different courses.
 - The web service API including choice of HTTP methods, URLs and parameters.

You may regard any authorization requirements for the web services as orthogonal issues outside the scope of your design. *15-points*

5. Discuss which HTML control you would use for each of the following form controls:
 - (a) A control which allows the user to provide the percentage of components which are defective.
 - (b) A control which allows the user to select one-or-more of the courses which are currently being offered by the CS department.

- (c) A control which allows the user to enter a customer-service complaint.
- (d) A control which allows the user to enter in a BU B-Number.
- (e) A control which allows the user to select their favorite dessert from a predefined list of desserts.
- (f) A control which allows a US user to enter in a telephone number (which may be an international phone number).

Your answers should be set up to maximally constrain the user's input to legal values and minimize the opportunity for error. You should use at most a single HTML control for each of the above and should provide the actual HTML code for each control. *15-points*

6. Discuss how you would serialize an arbitrary JavaScript object **hierarchy** to HTML using mustache. You may assume that the values of object properties are either primitives or objects or arrays. *15-points*
7. Discuss the validity of the following statements. What is more important than whether you ultimately classify the statement as **true** or **false** is your justification for arriving at your conclusion. *15-points*
 - (a) It is more efficient to send JSON rather than XML over a network since JSON is a more compact representation than XML.
 - (b) If an attempt to create a resource using PUT hangs, then it is ok to make a second attempt.
 - (c) If an attempt to create a resource using POST hangs, then it is ok to make a second attempt.
 - (d) If a HTML document has a syntax error, then an attempt to render it in a browser will result in an empty page.
 - (e) REST is a framework for building web services.