

CSCI 445 Exam

Fall 2022 – 50 points

This exam covers two important topics related to web development: frameworks and REST architecture. It would be very difficult, if not impossible, to fully understand frameworks without actually using one. Our goal is for you to become familiar with topics related to frameworks, so that after this course you could choose and learn a framework on your own.

Although the questions below relate to general framework features, to answer in sufficient detail it may be easier for you to research and explain a specific framework. For example, you are asked to explain routes and controllers. You might want to include examples from a specific framework (a quick google yields examples from Laravel, Slim and Fat-Free... probably others).

1. (5) List at least 5 reasons to use a framework (compared to writing code from scratch).
2. (8) Explain the MVC architecture. List (but don't describe) two alternatives.
3. (5) What is meant by a "lightweight" framework? When might this be your best option?
4. (10) Explain (in some detail) at least 2 security features commonly built into web frameworks.
5. (5) Explain Object-Relational Mapping (ORM).
6. (7) Explain (in some detail) the concept of routes and controllers.
7. (5) Explain the REST architecture. What makes an API restful?
8. (5) What is CRUD, and how does this relate to REST?

Additional Requirements:

- Do not plagiarize; if you are using exact wording from a source, use quotation marks.
- Include a list of your sources (use whatever citation style you prefer).
- Write your answers in a clear, concise manner. One long paragraph or collection of ad hoc facts is *not* sufficient. If I feel worn out trying to read your document, you will lose points!!
- Include tables, bullets, or images as needed (cite your source for any code snippets etc. that you include, of course).
- BE SURE TO SPELL CHECK and watch for grammatical errors.
- Put your name at the top of the first page (No title page!). Document should be single spaced with reasonable margins (no larger than 1").
- Your document MUST be in pdf format.

Grading is subjective – convince me you've given each topic some thought!