

# Final Exam

## Instructions

Please write your name and university-issued email address below in the space provided:

**Name:** \_\_\_\_\_

**Email Address:** \_\_\_\_\_

You will have 90 minutes to answer the questions contained herein. You may submit the exam at any time within that period. Once you begin the exam, you may not leave the room until you submit it.

You are expected to not consult with any other source of information during the exam period. There should be no talking for any reason during the exam period. If you have a question about the exam material, raise your hand and wait for an opportunity to ask the professor for clarification.

Please do not unstaple the exam or re-order its pages in any way. When you are ready, you may begin. Good luck!

## Evaluation

The weights of all questions sum to 101%, 1% of which represents an opportunity for “extra credit.” The relative weight of each question is detailed in the table below:

Question Number	Question Weight	Component Weights
1	8%	(4% for each of a. and b.)
2	24%	(6% for each of a., b., c., and d.)
3	5%	(1% for each of a., b., c., d., and e.)
4	6%	(2% for each of a., b., and c.)
5	6%	(3% for each of a. and b.)
6	30%	(6% for each of a., b., c., d., and e.)
7	8%	(4% for each of a. and b.)
8	6%	(2% for each of a., b., and c.)
9	4%	(2% for each of a. and b.)
10	4%	(2% for each of a. and b.)

# Internet Architecture

1. In **client/server architecture**, please describe the role, including the primary responsibility of, each of the following computers:
  - a. *Client*:
  - b. *Server*:
2. Please describe both the purpose and usage of each of the following **HTTP Request Methods**, and identify which CRUD operation (*Create*, *Read*, *Update*, and *Destroy*) most closely relates to each:
  - a. *GET*:
  - b. *POST*:
  - c. *PUT*:
  - d. *DELETE*:

3. Please draw a straight line between one item in the left column and one item in the right column to match each of the following generic **HTTP Response Codes** with its respective description:

- |               |                          |
|---------------|--------------------------|
| a. <u>1xx</u> | i. <u>Client Error</u>   |
| b. <u>2xx</u> | ii. <u>Successful</u>    |
| c. <u>3xx</u> | iii. <u>Server Error</u> |
| d. <u>4xx</u> | iv. <u>Informational</u> |
| e. <u>5xx</u> | v. <u>Redirection</u>    |

## Web Development

4. Please describe the role of each of the following **languages** within the context of web development:

a. *HTML:*

b. *CSS:*

c. *JavaScript:*

5. Please describe the role of each of the following application **deployment environments**, including the primary users/audience of each:

a. *Development:*

b. *Production:*

6. Given the JavaScript object below, **write JavaScript code** which references the `person` variable to perform each of the following tasks:

```
var person = {  
  first: "Santa",  
  last: "Claus",  
  spouse: "Mrs. Claus",  
  message: "Ho Ho Ho",  
  stops: ["New York", "Denver", "San Francisco"]  
}
```

- a. Output the person's full name (i.e. `"Santa Claus"`):
  
  
  
  
  
  
  
  
  
  
- b. Output the number of stops this person makes (i.e. `3`):
  
  
  
  
  
  
  
  
  
  
- c. Output the name of the first stop this person makes (i.e. `"New York"`):
  
  
  
  
  
  
  
  
  
  
- d. Output the name of the last stop this person makes, irrespective of the actual number of stops the person makes (i.e. `"San Francisco"` or whatever the last stop happens to be, in the event more stops get added later):
  
  
  
  
  
  
  
  
  
  
- e. Loop through each stop and output the name of each one at a time (i.e. `"New York"`, then `"Denver"`, then `"San Francisco"`, each on its own line):

## Software Development Practices

7. Please describe the advantages and disadvantages of using **version control**:

a. *Advantage(s) of using version control:*

b. *Disadvantage(s) of using version control:*

8. Please list at least three **open source** JavaScript libraries or packages you used during the course of the semester:

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

9. Please describe the advantages and disadvantages of using **existing open source software**:

a. *Advantage(s) of using existing open source software:*

b. *Disadvantage(s) of using existing open source software:*

10. Please describe the advantages and disadvantages of **licensing your own software as open source**:

a. *Advantage(s) of licensing your own software as open source:*

b. *Disadvantage(s) of licensing your own software as open source:*