

# Knowledge Test K1

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COMP 4081 • Software Engineering • Fall 2019

## Solutions

Name: \_\_\_\_\_, \_\_\_\_\_  
Last name First name

### Rules:

- No potty breaks.
- Turn off cell phones/devices.
- Closed book, closed note, closed neighbor.
- WEIRD! Do not write on the backs of pages. If you need more pages, ask me for some.

### Reminders:

- Verify that you have all pages.
- Don't forget to write your name.
- Read each question carefully.
- Don't forget to answer every question.

1. [3] What three things does great software deliver?

**Functionality that meets the customer's needs**

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**Delivered on time**

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**Delivered on budget**

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2. [1] Which one of the following is indicative of the *software crisis*?

- a) High rates of distraction-related automobile crashes
- b) Election interference from foreign powers via social media
- c) High failure rates among software projects

3. [1] Which of the following is the *Single Responsibility Principle*?

- a) A class should have only one reason to change.
- b) Each developer on a team should have one main responsibility.
- c) Every app will have one responsibility that is most important to users.

**Also accepted c, but a was the better answer**

4. [1] What kind of diagram is depicted in Figure 1?

- a) Class diagram
- b) Dataflow diagram
- c) Control flow diagram

5. [3] What does each letter in MVC stand for?

<b>M</b>	<b>V</b>	<b>C</b>
a) Management	a) Value	a) Console
<input checked="" type="radio"/> b) Model	b) Version	<input checked="" type="radio"/> b) Controller
c) Migration	<input checked="" type="radio"/> c) View	c) Compiler

6. [3] What are the various components in MVC responsible for?

<b>M components</b>	<b>V components</b>	<b>C components</b>
a) User interface	<input checked="" type="radio"/> a) User interface	a) User interface
b) Translating between user interface actions/events and operations on the domain objects	b) Translating between user interface actions/events and operations on the domain objects	<input checked="" type="radio"/> b) Translating between user interface actions/events and operations on the domain objects
<input checked="" type="radio"/> c) "Business logic" and domain objects	c) "Business logic" and domain objects	c) "Business logic" and domain objects

7. [3] For each of the following operations that a web browser might perform on a resource, tell which type of HTTP request method should be used.

<b>Create resource</b>	<b>Delete resource</b>	<b>Read resource</b>	<b>Update resource</b>
a) DESTROY	<input checked="" type="radio"/> a) DESTROY	a) DESTROY	a) DESTROY
b) GET	b) GET	<input checked="" type="radio"/> b) GET	b) GET
c) PATCH	c) PATCH	c) PATCH	<input checked="" type="radio"/> c) PATCH
<input checked="" type="radio"/> d) POST	d) POST	d) POST	d) POST

8. [6] For each term below, give the letter label from Figure 1 for the corresponding diagram element.

Browser   **a**  

C from MVC   **d**  

Database   **h**  

Internet   **b**  

M from MVC   **f**  

Router   **c**  

V from MVC   **e**  

9. [1] What is the purpose of the router in the rails MVC diagram?

- a) It handles controller method calls to the model.
- b) It determines what server to communicate with.
- c) It translates HTTP requests into calls to controller methods.

10.[1] Which of these terms best describes Git?

- a) Distributed Version Control System
- b) Issue Tracking System
- c) Web-Based Version-Control Repository Hosting Service

11.[1] Which of these terms best describes GitHub?

- a) Distributed Version Control System
- b) Issue Tracking System
- c) Web-Based Version-Control Repository Hosting Service

12.[1] Which Git command saves a new version of the project to the local repository?

- a) Clone
- b) Commit
- c) Push

13.[1] Which Git command downloads a remote repo and sets up a local repo and working directory?

- a) Clone
- b) Commit
- c) Push

14.[3] For each term below, give the letter label from the Git-repo diagram in Figure 2 for the corresponding diagram element.

Branch     **b**    

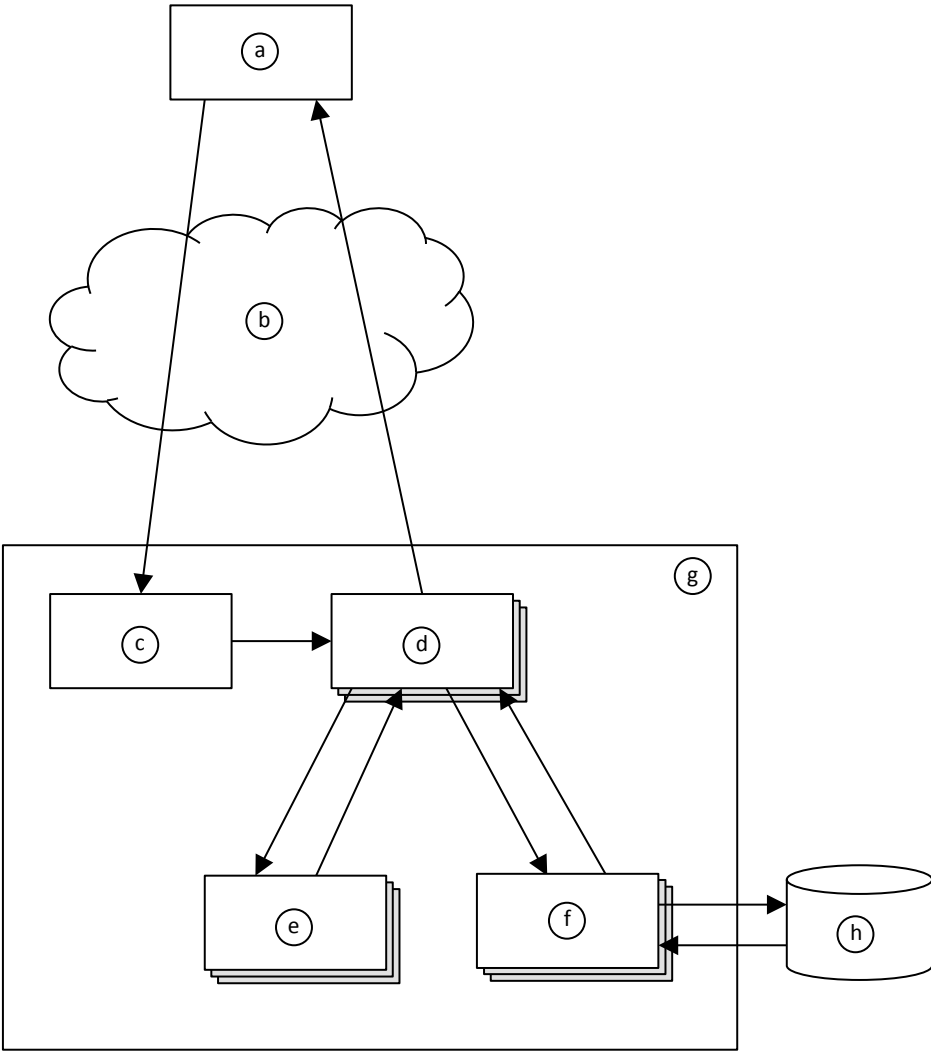
Commit     **c**    

HEAD     **a**    

15.[1] Which of the following does not help with Rails development environment configuration management?

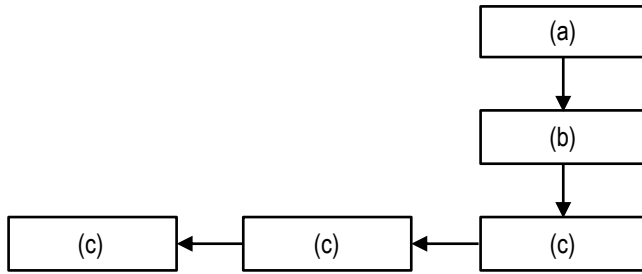
- a) Bundler
- b) PostgreSQL
- c) RVM

Figures



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Figure 1



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**Figure 2**