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| Release Date | Term 3, Week 1, Tuesday |
| Due Date | Term 3, Week 3, Sunday |

## Introduction

As a developer (dev) you are sometimes required to prove your knowledge to prospective clients and employers.

## Brief

In order to demonstrate your understanding of fundamental software concepts, you will provide answers to a series of short answer questions.

Q1. Provide an overview and description of a standard source control process for a large project

<https://code.tutsplus.com/articles/team-collaboration-with-github--net-29876>

CMP1043-2.1 Provide an overview and description of your source control process.

6.0 to >5.0 pts

HD

Provides an extensive overview and description of a standard source control process

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| --- | --- | --- | --- | --- | --- |
| Provide an overview and description of your source control process. | 6.0 to >5.0 pts  HD  Provides an extensive overview and description of a standard source control proces | 5.0 to >4.0 pts  D  Provides a very good overview and description of a standard source control process | 4.0 to >3.0 pts  CR  Provides a good overview and description of a standard source control process | 3.0 to >2.0 pts  P  Provides a basic overview and description of a standard source control proces | 2.0 to >0 pts  F  Does not provide a sufficient overview and description of a standard source control process |

Q2. What are the most important aspects of quality software?

There is a standard for quality software

<https://www.silasreinagel.com/blog/2016/11/15/the-seven-aspects-of-software-quality/>

<https://www.tutorialspoint.com/software_testing/software_testing_iso_standards.html>

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| CMP1043-2.2 What are the most important aspects of quality software? | 6.0 to >5.0 pts  HD  List discuss and demonstrate 6 software quality characteristics. | 5.0 to >4.0 pts  D  List discuss and demonstrate 5 software quality characteristics. | 4.0 to >3.0 pts  CR  List discuss and demonstrate 4 software quality characteristics. | 3.0 to >2.0 pts  P  List discuss and demonstrate 3 software quality characteristics. |

Q3 Outline a standard high level structure for a MERN stack application and explain the components

Provide an example of an app

my plan was to just explain what each letter of mern is doing?

Mongodb, express, react, nodejs

Tell me what each of these components are and what they do in context of the application

M - MONGODB - DATBASE

E - EXPRESS - BACKEND

R - REACT - FRONT END

N - NODE - BACKEND

Q4. A team is about to engage in a project, developing a website for a small business. What knowledge and skills would they need in order to develop the project?

**Hard skills:**

* Server
* Source control
* Ruby
* JavaScript
* HTML
* CSS
* Python
* Payment systems
* Understanding auth
* CLI
* Could services
* Responsiveness

**Soft skills:**

* Ability to work in a team
* Strong communication (internal & external communication)
* Time management
* Project management
* Development methodology (Agile)

Seek.com job reqs list e.g “Demonstrated experience as a full stack developer

* Broad technical experience in coding, DevOps, API’s and micro-services
* Proven experience in cloud native application development (react and similar frameworks or JavaScript)
* Experience in developing API’s and micro services (node.js, hapi, joi, swagger)
* Experience with applications that are hosted in Cloud Foundry or Kubernetes
* In addition, you will benefit from experience with TypeScript, NoSQL databases, AWS, Azure and GCP

describe how and where they will be implemented

Go into detail on each

Q5. With reference to one of your own projects, discuss what knowledge or skills were required to complete your project, and to overcome challenges

Question four is about skills in general, question 5 is specific to one of your previous works. WHY was payment gateways important for your project, WHY was source control necessary for your project

Q6 With reference to one of your own projects, evaluate how effective your knowledge and skills were for this project, and suggest changes or improvements for future projects of a similar nature

check comments on previous assessments to see what went wrong

Evaluates effectiveness of knowledge and skills accurately,

providing examples

and providing an insightful improvement on each skill

Q7 Explain control flow, using an example from the JavaScript programming language

<https://dev.to/mugas/control-flow-in-javascript-246l>

Q8 Explain type coercion, using examples from the JavaScript programming language

<https://www.freecodecamp.org/news/js-type-coercion-explained-27ba3d9a2839/>

Q9 Explain data types, using examples from the JavaScript programming language

Q10 Explain how arrays can be manipulated in JavaScript, using examples from the JavaScript programming language

Q 11 Explain how objects can be manipulated in JavaScript, using examples from the JavaScript programming language

Q12 Explain how JSON can be manipulated in JavaScript, using examples from the JavaScript programming language

Q13 For the code snippet provided below, write comments for each line of code to explain its functionality. In your comments you must demonstrates your ability to recognise and identify functions, ranges and classes