



Prifysgol Cymru  
Y Drindod Dewi Sant  
University of Wales  
Trinity Saint David

## Examination Answer Books

12 Pages

### Instructions to Candidates

1. Please give the information requested in the boxes below.
2. Enter your name in the space provided to the right, fold over and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either ignore illegible script or have it typed and the expense of typing charged to the candidate.
4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
7. If more books than one are used, fasten them together using the tags available from the invigilator(s).
8. **Every book must be handed in. In no circumstances may answer books, used or unused, be taken out of the examination venue.**

Complete, fold and seal  
(see note 2 below)

SURNAME:

Newlands

FORENAME(S):

Joshua Daniel

Sohn

|   |                                  |                           |
|---|----------------------------------|---------------------------|
| 1 | Student Number                   | 1602713                   |
| 2 | Title of Examination Paper       | Emerging web technologies |
| 3 | Module Code                      | M6X01096                  |
| 4 | Date and Time of Examination     | 15/05/2019                |
| 5 | Examination Venue                |                           |
| 6 | Seat Number                      | G043                      |
| 7 | Number of Answer Books handed in | 1                         |

| List the numbers of the questions you have attempted | Office Use |
|------------------------------------------------------|------------|
| 1. a                                                 |            |
| 1. b                                                 | 16         |
| 1. c                                                 |            |
| 2. a                                                 |            |
| 2. b                                                 | 14         |
| 2. c                                                 |            |
| 3. a                                                 | 23         |
| 3. b                                                 |            |
|                                                      |            |
|                                                      |            |
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|                                                      |            |
|                                                      |            |
| Total                                                | 71%        |

53  
75

GT 24/5/19

(Gweler yr ochr arall am y fersiwn Cymraeg)

1. a, The javascript code in ~~an~~ appendix 1 shows a counter ~~met~~ function that has two methods, the methods are called Count which progresses the count by 1 and ResetCount which ~~resets~~ the count to the initial count specified when the object is instantiated. The ~~reave~~ revealing module pattern comes into play through the counter function having specified a return. ~~The return defines~~ 'Next' as calling the count method and 'Reset' as calling the ResetCount method. In the program then the exposed methods ~~are~~ for counter are only those revealed through return which is 'Next' and 'Reset'. The pattern allows control over which methods are visible to the rest of the application as well as what those methods are referred to as.

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1. b, A cross origin post may be where a new page request has been sent and a page delivered after a request to a page specific service has been sent. ~~The service may~~ be responding to a page that is wrong for the request. A solution may be to restrict page requests until all service responses have been full filled or to timeout / cancel service responses when a new page request has been made.

2

1. c) Typescript is a javascript building language. What this means is that ~~javascript~~ typescript compiles to javascript. The reason this is the case is because typescript is built to be an improvement on javascript until javascripts api becomes updated to be able to ~~handle~~ define more object oriented approaches. The benefits of typescript is that it allows developers to more easily achieve classes and inheritance within ~~java~~ instead of directly coding imbedded functions to simulate classes. Whilst typescript compiles to these complex imbedded functions, it reduces the development time needed for developers to build object oriented applications. This allows for more development time on oop design patterns that can improve the efficiency and Scalability of the ~~code~~ application.

2. a) The four v's of big data are:

- Volume - this refers to the size of the data.
- Velocity - this refers to the frequency of the data being manipulated.
- Variety - this is the number of types of data and unstructured data types.
- Veracity - this refers to the

2. b) The map function splits the data up into sections that can be ~~sort~~ manipulated further along the map reduce process. Shuffle and sort groups repeating data whilst sorting it into a processable order. From the shuffle and sort the reduce section uses data and value pairs to represent the number of times this data has been this data present. This data reduction process can make big data easier to manage through reducing its size and therefore the overhead. This data can then be manipulated in statistical charts for further processing as well.

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2. c) Big data is a large challenge for companies to manipulate due to the large server overhead involved in its size. Some requirements for viewing big data may be a need for low latency real time presentation of the data in which case modified data and delete data are processes which will increase the latency of the data. When big data is modified or deleted due to the size of the data the accuracy and overheads of the p. of the data would suffer which would reflect badly, big data must be manipulated with caution.

2

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3. a) The web service rest is a popular choice due to its principles. Rest uses ~~http~~ http methods explicitly (GET, POST, PUT, and DELETE) as well as this. REST is a stateless web service that exposes directory-like uri. Another benefit of using rest web service is that it can use json or Ajax, or both.

The way that Rest uses crud operations it is through:

- creating a resource with POST.
- Reading a resource with GET.
- Updating a resource with PUT.
- Deleting a resource with DELETE.

The ~~Post~~ POST and PUT methods place data in the request body. ~~an~~ Whilst GET, PUT, and DELETE require data in the URL headings.

3. b) The Pull and Push methods of getting data to clients are very requirement orientated in their usage. When time is not critical to the receiving of the data then the pull method is always preferred. The pull method is always preferred in this case due to the fact that pull uses ~~a~~ AJAX to periodically open a connection from the client side to the server to get the information. The push method requires the server to always maintain an open connection with the client in order to give data as it comes. With the push methods the overheads on the server load are increased due to the connection always remaining open, with many clients this can quickly overload the server. Unless time is critical to the ~~us~~ client receiving the data then

having a pull method on the client side to periodically connect and pull data is preferred.

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Good answer