



Complete, fold and seal
(see note 2 below)

SURNAME: Richy

FORENAME(S): Lenkins

12 Pages

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.**

List the numbers of the questions you have attempted	Office Use
1	12
2	13
3	16
Total	55%

(Gweler yr ochr arall am y fersiwn Cymraeg)

A.1 ~~First The method ~~the~~ counter gets~~

First an object is created from the function/method counter passing in "initial count" (0) parameter, this function/method contains 2 ^{local} private functions called "count" and "Reset count". After the object was created, counter.Reset() was called, this would return _count attribute to zero. counter.Next() would get the current value and increment it by 1. at the start of the main function _count is a local variable that gets the value from the object being created "initial count".

b.1 When using web ^{services} ~~services~~, sometimes the browser will display an error stating the "action is a cross origin". cross origin is when the browser gets a request to communicate to another service that isn't on the current domain as the server. browsers do this to stop ^{various} ~~malicious~~ attacks. The solution to this would be to have a proxy sit on the server so the request would come from the client to the server then from the proxy on the server to the web service.

C.1 Type ~~Script~~^{Script} is a Language that Compiles into Java Script and the Following benefits are;

- Type Script supports types such as int, string, float etc
- Type Script supports classes, interfaces and every thing in between
- Type Script ~~syntax~~ syntax is a lot more easier to ^{read} and allows better workflow.

4

12
agreed

A.2

Volume - The amount of data

Velocity - The speed of the data coming in or moving around.

Veracity - The correctness of the data, is it reliable.

V - The Format of the data, is it Structured data or not-structured or is it semi-structured

Structured - From structured data based, semi-structured like JSON/XML, not-structured is Random data from users or machines

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A bit
brief!

b.2 big data databases involve number of multiple data bases communicating.

Map Function - is to get the first first row data and start to analyse it. splitting it up into smaller resources. ✓

Shuffle and sort - to take the map function data and puzzle it into the correct locations. ✗

Reduce Function - is to split the data up again put keep them in the pairs, allowing small analysis to be done on separate instances instead at once
 10 - Faster, easier to manage ✗

Final output - The final data output requested.

key value pair is important to keep some information linked to the data such as; ✗

"name": "Ricky",
 "age": 29

to

c.2 The term big data is to store a large amount of data. This data should never be ~~deleted~~ deleted due to big data always being useful in some way. The collection of all data is the big reason for "big data" ✓

13
25

A.3 REST based services are becoming more popular due to the benefits it contains such as;

- it's stateless

- it accepts a number of data structures such as JSON, XML, or both and more.

- REST is ~~open~~ ^{open} for publication, meaning any device or software can communicate to it.

crud operations of REST;

post - allows a submission of data from the client. This in REST terms would be the insert for a database. Example: `http://www.example.com/login`

get - allows the retrieval of data, can be normal or in URI. Gets data from for eg page or a certain resource. Example: `http://www.example.com/users/101/`
`http://www.example.com/users/48`

delete - to Request to delete data using URI, Example: `http://www.example.com/removeuser/48`

put - to Request or send data to be updated Example: `http://www.example.com/updateuser/48` ^{username = admin and sign}

There is also other options such as; headers, options

Q2. A link pull vs push

- pull, pull is when the server will keep a open connection to the client and when an event happens the server will send data to the client and keeps the ~~conn~~ connection open.

- push, push is when a client has a set timer and when counts down to zero fires event to Request data from the server if any has changed. and then resets the timer.

the draw back to pull is keeping a connection open constantly from server to client is less secure bandwidth heavy ~~and~~ it creates an issue due to the server only having a limited amount of connections allowed.

The draw back to push is that the client might be creating multiple requests each second and getting the same result due to the server data not being changed or updated. this also creates a lot of useless bandwidth usage.

16
25
agreed