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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 margin 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: Rowland

FORENAME(S): Josh, Benjamin

1	Student Number	P145133
2	Title of Examination Paper	Emerging web technology
3	Module Code	M6X01096
4	Date and Time of Examination	12 PM 9th May 2018
5	Examination Venue	Gym
6	Seat Number	G061
7	Number of Answer Books handed in	1

List the numbers of the questions you have attempted	Office Use
1 a	13
b	
c	
2 a	13
b	
3 a	15
b	
c	
Total	55%

41
75

55% GT

1/6/18

1a As seen in the code the initial interface IDrawable is declared which must have a ~~void~~ value so that it can be implemented later in the code. Typescript supports OOP concepts because it is a subset of JS that uses ^{objects} ~~objects~~. The Position class contains two private objects: -x and -y which are both numbers. The constructor is used to set -x and -y to just x and y. The following two methods (Get X / Get Y) are both used to return the value of -x and -y.

The abstract class ^{shape} ~~is used~~ ^{is used} is used while ^{implementing} ~~inheriting~~ IDrawable at code. The "private -el: JQuery;" is used to set the -el as a JQuery object while the -position is set as the position value which was created in the previous class which allows it to use the get methods. Abstract classes can be used by any other function.

The constructor is the same as before where we set the -position to a position. This is a common technique to help keep track of objects better. ?

The get EL is the same concept as seen for the get x and get y which will later return a value.

Change Position is the main method where the code will set the exact position of x and y.

The Draw(): void is then called to draw at the set positions

The final function is then used to draw on an extra position known as Position Z with the code then calling Draw to once again draw the shape.

1

5

✓

- 6) The Picture class would require the inheritance from the Shape via an extension and the the creation of an array or list with a number of times the user can create a new picture.

2

✓

c) XML

```
<employee>
  <name> Fred Bloggs </name>
  <department> Engineering </department>
  <roles> Designer, Programmer, Tester </roles>
  <email> Fred.bloggs@company.com </email>
  <telephone> 01523847983 </telephone>
</employee>
```

<role> Designer
Programmer
Tester

JSON

var e

JSON

```
var employee {
  "name": "Fred Bloggs",
  "Department": "Engineering",
  "roles": ["Designer", "Programmer", "Tester"],
  "email": "Fred.bloggs@company.com",
  "Telephone": "01523847983"
}
```

6

13

2a ~~REST~~ REST is a very popular choice because it works by a ^{simple} HTTP request that can be seen in the URI which directly points to a certain action. REST stay stateless throughout which also increases its efficiency especially when using its GET, POST, PUT and DELETE methods to work which are ~~virtually~~ the same as CRUD operations. REST also allow for the dynamic content change through javascript which can display data in real time, change images on action and so on. REST has extensive scalability which allows it to continue growing by simply adding an extra server if needed. REST also works better with polling to ~~pull~~ pull data from the source to the client or push data from the ~~data~~ server to the client. Data is sent via a secure proxy to ensure data is secure and correct.

9

2.5

AJAX and REST are both popular mainly due to how easy to use and implement they are along with their flexibility and efficiency. There is also far less overhead due to the methods in the URI (stateless)

6) Their solution works because they had no ~~request~~ response from the web server but now the server sends an same origin response. ~~There is also far less overhead when used in an interactive application as it is done quickly in the URI.~~

1.5

✓ 13

3a Volume:

The amount of storage space e.g. Gigabytes, Peta bytes etc

Velocity:

The speed of the data transfers e.g. mb/s

Variety:

The different forms of data stored such as images, videos, forms, music.

Veracity:

the simply the validity of ~~the~~ data, can it be used? is it corrupt?

b) Big data normally uses the lambda architecture as seen in the diagram which revolves around its three layers

Batch layer:

This layer is used on large datasets but is very slow so we create smaller subsets called a batch view of data that is at least a few hours old because if it were real time data it would be unreliable due to its speed.

The

Service layer:

This layer is where we see and use the batch views to query through data produced by the batch layer. The batch views can be removed at any time or kept, there is no expiration date.

Speed layer :

The speed layer is used to query data in the real time view using data that is minutes old and is ideal for selling something like music venue tickets as it is done so fast and all items need to be uniquely identified so nothing is sold twice. This allows for low latency data.

b) You can query both the real time and batch views but if you want older data then use batch view. Big data systems should always allow for scalability with low complexity.

c) Most big data systems have a YARN based system in place to handle the control of job allocation and errors. If the system fails the YARN will handle restarting it. For example, big data systems are also heavily human fault tolerant. Eventual consistency is the process of data becoming correct and consistent over time because the data is immutable more data will just continue to be added while bad or expired data is eventually deleted.