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# [FRENQUENTLY ASKED QUESTION](#_top)

**----------ooo0ooo----------**

1. **Regarding garbage collector, Object A refers to object B and object B refers to object A, will they be collected? (Answered by Nhan Nguyen)**

They will be collected if they are cut off from the root object (don’t have other objects  which are referencing to A and B, in other words, A and B “mồ côi”).

1. **Regarding data safe in multi thread programming, in ConcurrentHashMap, you need to put an object to a map, before doing it, you’ll check if there is any existing entry. Then what will happen if there is a thread putting the same object to the map? (Answered by Cuong Nguyen)**

Question 2 is a typical Race condition problem.

The problem is still existing if using ConcurrentHashMap the wrong way:

If (map.get(key) == null) {

map.put(key, value);

}

Because we are doing it in 2 separate operations (get, put), so race condition happens.

But ConcurrentHashMap provide us this method:

ConcurrentHashMap.**putIfAbsent**(K key, V value)

If we use this method, we will have no trouble.

1. **Is there any case when you init an object and it’s null? (Answered by Cuong Nguyen)**

when init the object, if the constructor throws Exception, it will be null.

# [SOME QUESTION FROM PREVIOUS CANDIDATES](#_top)

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**Interview conversation of: Cuong Nguyen**

**Interview on: Jun 21, 2013**

**Interviewer: Ravi, Venkat**

## INTERVIEW CONVERSATION OF CUONG NGUYEN

1/ How long have you been working on MAC-MC projects?

4.5 years

2/ How long have you been working with Qooxdoo?

3 years

3/ How much time does it take to render 2000 devices on a 3D Map using WebGL?

13 minutes?

4/ Explanation about the MAC-MC architecture ...

5/ Introduce about Qooxdoo fwk, Zing Chart ...

6/ How many Ajax calls did you do at the same time?

More than 2

7/ Some explanation about 2D, 3D topology, 3.js was mentioned to render 3D objects, lighting, shadow.

8/ What feature of HTML5 did you work on?

Canvas mostly

9/ How about CSS3?

Styling some elements

10/ More explanation about Qooxdoo

To render the UI, do the DOM manipulation

11/ Do you do any javascript outside of Qooxdoo (in 3 years)?

...

12/ Qooxdoo limitation?

not properly cross browser. E.g. IE

13/ How Qooxdoo do data binding? Automatically? Do you know about 2 ways data binding?

14/ Do you know any other / modern Javascript fwk?

15/ Is MAC-MC an ALU project?

it's an Australian client

16/ How do you support i18n?

Get the i18n data from server

17/ How do you organize your code structure?

18/ How do you unit test your javascript?

19/ How much time do you spend on working with the Java on the server side?

60% server side, 40% client side

20/ What do you use JQueryUI for?

Drag drop, arrange UI elements

21/ How do you join data from multiple table?

22/ Have you work with wizard like widget?

23/ event streaming questions...

**Interview conversation of: Tan Ho**

**Interview on: Jun 21, 2013**

**Interviewer: Venkat, Ravi**

## [INTERVIEW CONVERSATION OF TAN HO](#_top)

1 – What is the data format stored in MongoDB?

JSON

2 - Why did you use both XML & JSON?

XML is to share to others, and JSON is to store in Database.

3 – Why don’t use only JSON or XML?

XML is human readable format. People can read it, understand it and edit it if necessary.

And JSON is more reasonable for computer to read, store, manipulate than XML. XML is too verbose for computer.

**Interview conversation of: Thu Trung**

**Interview on: Jun 21, 2013**

**Interviewer: Venkat**

## [INTERVIEW CONVERSATION OF THU TRUNG](#_top)

Quarzt Framework

1. What Trigger did you use in your project?
2. Do you know SNMP,have you ever worked on SNMP?
3. Have you used common UI components such as : Accordion,Table,DropDownList...
4. What HTML5 features have you used?
5. What are the advantages of HTML5 Web storage over cookies?

Possible web technologies related questions:

1. Does your web application support multiple browser? How did you do it? Do you need to detect what kind of web client (Firefox, Opera, ...) the user used and how?
2. What did you use jQuery for?
3. Have you done anything from the scratch? E.g: the CSS, the javascript, the whole web page / web app?
4. Do you use or know HTTPS? How would it be implemented in your project?
5. How do you support i18n / l10n in your web app?
6. Does your web app keep track / persist the user's preference? What kind of data / information of the user do you store on the client side and the server side?
7. Do you aware of any common web vulnerabilities?

Do you know any MVC framework for web client side?  
  
Project related questions:

1. Could you explain briefly about the architecture of Zimbra and Zimbra Mobile? There would be multiple questions after this?
2. What role does Quartz play in Zimbra?
3. You mentioned about ' Developing plug-ins ', did you mean jQuery plug-in? Do you know how to write a jQuery plug-in? Else what is this 'plug-in'?
4. Tell me more about 'Developing data interchanging process '?
5. Why does Zimbra Mobile need to use SOAP? Why does it only support iOS devices?
6. Do you know jQuery mobile? Did you use it in your mobile web app? Tell me more about how you applied it?

**Interview conversation of: Thau Nguyen**

**Interviewed on: Sep 13, 2013**

**Interviewer: Ravi**

## [INTERVIEW CONVERSATION OF THAU NGUYEN](#_top)

1. **How does inheritance works in Javacrispt?**

[Ngan] Javascript is an OOP language. You cause a class to inherit using

ChildClassName.prototype = new ParentClass();

You need to remember to reset the constructor property for the class using ChildClassName.prototype.constructor=ChildClassName.

Besides that, you can also use

ChildClassName.prototype = Object.create (ParentClass.prototype)

1. **What is difference between “= =” and “= = = “**

[Ngan] “==” is operator to compare value of 2 variables

“===” is operator to compare value and type of 2 variables.

1. **What is difference between “Window.onload” and “ondocumentready” ?**

[Ngan] The **onLoad** event occurs after all the page elements are fully(completely) loaded. That includes the DOM, the scripts, the images…

As a constrast, the **onDocumentReady** event is triggered immediately after the DOM was loaded by the browser, even if other resources might not be finished loading like scripts, images…

1. **“Ondocumentready” event identify before or after the CSS?**

[Ngan] The **onLoad** event fires after loading CSS. The **onDocumentReady** event fires before loading CSS.

1. **About the check box element, have you check or not?**
2. **Can you give me an example of that?**
3. **Value checkbox in Javacripst and HTML?**

[Ngan]In Javascript, you get attribute “checked” of element. If value is true when check box checked, otherwise is not checked.

In HTML, to define a checkbox is checked, you add option **checked** in contain of check box input. Example:

<input type="checkbox" name="vehicle" value="Bike"> **Not checked**

<input type="checkbox" name="vehicle" value="Car" **checked**> **Checked**

1. **How do you know what concerned isNAN?**

[Ngan] The **isNaN**() function determines whether a value is an illegal number (**Not-a-Number**).

This function returns true if the value is **NaN**, and false if not.

1. **Concept of clsure in Javacript?**

[Ngan] still not find out the answer

1. **JQuery component, have do you use?**

[Ngan] I used to use Scroll view and Tooltip of Jquery

1. **How do you debug on Javacrispt code?**

[Ngan] using command console.log() in script, and using firebug (debug tool) in browser FireFox.

1. **In Javacripst, check a variable is object or not?**

[Ngan] Using command: **typeof** (var) == 'object'

1. **Before that, you need to do something?**

[Ngan] you need check variable is defined.

1. **Do you know about relative positioning and absolute positioning?**

[Ngan] Relative positioning uses the same four positioning properties as absolute positioning. But instead of basing the position of the element upon the browser view port, it starts from where the element would be if it were still in the normal flow.

Refer to <http://webdesign.about.com/od/advancedcss/a/aa061307.htm>

1. **Do you know how to stack order of an element in CSS?**

[Ngan] The z-index property specifies the stack order of an element.

An element with greater stack order is always in front of an element with a lower stack order.

Refer to <http://www.w3schools.com/cssref/pr_pos_z-index.asp>

**Interview conversation of: Hieu Bui**

**Interview on: Sep 24, 2013**

**Interviewer: Venkat, Kausal**

## [INTERVIEW CONVERSATION OF HIEU BUI](#_top)

1. **How many request you can post at the same time? (Ajax)**

Already in our library.

1. **Jsp and Javascript used in your project?**

Yes.

1. **Render HTML page by JSP or JavaScript?**

Render some important tags HTML by JSP, and at client side we will get those tags by JavaScript and render page by JavaScript

1. **how many such concurrent or parallel requests at the same time? How you handle it?**

In HTML5 have worker = thread.

We send asynchronous request to server and handle it bay callback function.

1. **How do you handle press submit button twice?**

When user press submit button i will disable a submit button until the request complete.

1. **How do you handle back button when user have many page? Press submit ? back to previous page?**

For information that user input:

It depend on what we want to do in this case for page :

if we want when user press back button and page will navigate to previous page with old values. We can store values in cookie, state object (HTML5), web storage (HTML5)

1. **what happen when you press refresh? Back to previous page or stay at current page?**

For multi page with different url and when we press next/submit button it will change location.href (change url in url bar of browser) and reload page: stay at current page.

For simgle page : back to the first step.

1. **have you worked with charts,tables, tree objects?**

Yes

1. **how do you address them with long list of note? Tree?**

For note: I will paging to handle it.

For tree: first, when user loading tree, I will load level 1 node of tree. After user click on a node to expand . I will load the first level child of this node. And it’s the same for others node.

1. **have you worked with spring?**

No.

1. **your experience on JavaScript and html5? (Best in Javascript or HTML5)**

JavaScript.

**Interview conversation of: Hon Nguyen (Hao Huynh)**

**Interview on: Oct 25, 2013**

**Interviewer: Venkat, Kausal**

## [INTERVIEW CONVERSATION OF HON NGUYEN](#_top)

1.What mechanism do you use to create notifications in client side and server side?

2.What is the HTML5 server sent event?

3.How many event source do you create?

4.What angularjs directive do you use in your project?

5.Do you have use any jquery component in your table directive?

6.What function support in your table component?

7.What keyword to declare variable, global variable?

8.How do you check a object is undefined?

9.What equal do you use here?

10.What is a javascript closure?

11.Do you known javascript hoisting?

12.Do you know javascript scoping?

13.What is the HTML5's async & defer Script Attribute?

14.Do you use JSLint or JSHint JavaScript validation?

15.Do you build javascript chart component?

16.How do you know Image Sprites?

## [INTERVIEW CONVERSATION OF TRUNG NGUYEN](#_top)

* 1. How to handle 1000 pieces of the response in form of JSON format (HTTP streaming)

At the client side, we use XmlHttpRequest object to handle this. We assign a function as a callback function to “onreadystatechange”, this method will be called whenever a message arrives. Within the body of the function we will process the message in the following steps:

* + 1. Parsing the response message from JSON format to your own format.
    2. Put the parsed data into a list (for example)
    3. Update the page by adding element created from data item. Using jQuery to do this.
  1. What is the grid layout and its characteristics

Grid layout is used to contain the element followed by rows and columns. There are ways to modify the grid layout configuration like: changing the width of the column or changing the height of the row.

* 1. What is the differences between Single page application and Multiple page application
     1. Single page application: re-use the only one page for any action like: display home page, submit page…
     2. Multiple page application: for each and every one specific action (submit action for example), there will be separate page for it to handle the action.
  2. How to detect the time out on the client side

Use a timer at the client to check if the browser is timeout. The timer will run in the thread of the browser. Every action on the GUI will reset the timer.

* 1. What have you worked with HTML5 and CSS3

HTML5: web storage, canvas, web worker…

CSS3: animation, transition, round corner…

Describe more detail about the listed things above

* 1. How do you handle tap action on mobile device (It depends on your profile if you declared you have worked on mobile application)

<https://developers.google.com/mobile/articles/fast_buttons>

<http://www.techotopia.com/index.php/Android_Touch_and_Multi-touch_Event_Handling>

<http://stackoverflow.com/questions/18891865/handling-3-finger-tap-in-android>

## [INTERVIEW CONVERSATION OF DUC NGUYEN](#_top)

Questions relating to previous projects:

1. Any performance configuration that you have done (to support managing large amount of contacts)?
2. SMS system: contact mgmt. => how to get the contacts from the server and how to display them? UI rendering of the contacts?
3. Paging on server-side or client-side (to show the contacts)? (for SMS project)
4. Why don’t you support paging on client side?
5. How would you query the server for pages that you want? URL design (give samples, parameters…)?
6. List of contacts is sortable?
7. Page size is configurable? (Can number of items per page be configurable?)
8. Size of each object (i.e. contact)?
9. What did you use Bootstrap for?
10. What javascript components in Bootstrap to be used? How do you use it (describe the code in detailed)
11. With using drop-down menu, is there anything we need to consider? (limited level => in this case, only one level is allowed)
12. How do you support icon for each item in the menu?
13. How do you specify alignment for items in the menu? (when using drop-down menu component, it by-default supports this)
14. What have you done with UnderscoreJS?
15. Have you used underscore.chain?

Generic questions

1. What specific HTML5 syntaxes or sematic that you have used?

* nav, header, footer, aside, menu, section, article, … when to use what?

1. Do you start with HTML5 only in your project?
2. What are new features from HTML5 (compared to the old version)?

* Web storage, semantic tag, new input types, server-sent event, …

1. Do you know the limit for local storage? Is it browser dependent?

* LocalStorage data isn’t included in all requests like cookie
* Max size is 5 MB per domain (standard) but this varies from browsers to browsers (Opera even offers unlimited amount of spaces, IE offers 10MB, …).

1. Have you programed for tablet UI?

* The question is to gauge the candidates’ knowledge about programming with Touch devices, are they aware of handling touch event, the differences between Touch and Click event, why there is 300ms lag on a website developed with only click event, what event doesn’t make sense on Touch device (hover, right click, click, mouse events, …)

1. Are you aware of responsive design? (e.g. use MediaQuery in CSS3 to do)

* What is the limitation of @media queries?

1. Suppose that you need to show 2 charts in 1 screen. This is ok for desktop screen. But, if customers want to view the page in tablets => we need to show them in 2 pages (2 screens) for better navigation. One screen shows 1 chart and has the Next button to take customers to the next page.

How would you implement the aboves? (give details)

* Use @media query to show only the 1st chart and the ‘next’ button, the 2nd chart and the ‘back’ button is hidden. When clicking on the ‘next’ button, we will add a class to the parent element. This class will override the display property of both charts (show the 2nd, hide the 1st). The ‘back’ button will reverse this behavior (remove the added class).

1. How long have you been doing UI development?
2. Have you ever used multiple Ajax queries going from the same page? (i.e. a sample use-case: dashboard with 10 widgets => 10 request at a time to server)

* What is the maximum of concurrent requests can be sent at the client side? (browsers dependent)

1. How do you handle file transfer between client and server? (use jQuery’s plugin)
2. Tools for debugging? (Chrome Dev Tools)
3. What are typical types of bugs that you have debugged for?
4. Do you have any tool to do unit test? (e.g. jasmine, qunit, …)
5. Have you ever experienced memory leak problem with your code?
6. How do you confirm that your program doesn’t have memory leak?
7. Do you use any technique for taking snapshots for checking memory leak?
8. Do you know 3-snapshot technique? ([goo.gl/uDvu3](http://t.co/NUAHugSZ))

## [INTERVIEW CONVERSATION OF](#_top) THIEN TRUONG

1. Your top 3 strength areas?
2. Have you used any Javascript framework?
3. Request Mgmt project: when a supervisor assigns a ticket, will it be notified to the assignee immediately?
4. How do you handle pop-up (notifications) for the above case (new ticket comes to a queue)?
5. Is there any other way to achieve the above? (e.g. Comet – Web socket…)
6. Have you used web socket in any project?
7. What components have you used to create dashboard?
8. What browser(s) do you target for the project?
9. Suppose that you’re going to develop a new page, how would you make sure it can work across browsers? What is your approach? (e.g. detect whether features are supported in a browser… ⬄ use **Modernizr** library)
10. Do you use user-agent detection?

* No, UA Strings are not reliable and this will limit our application to work only on a specific set of devices. The up-to-date approach is to detect what feature the browser can support. And we have **Modernizr** for this.
* Modernizr aims to bring an end to the UA sniffing practice. Using feature detection is a much more reliable mechanic to establish what you can and cannot do in the current browser, and Modernizr makes it convenient for you in a variety of ways:
  + It tests for over 20 next-generation features, all in a matter of milliseconds.
  + It creates a JavaScript object (named Modernizr) that contains the results of these tests as boolean properties.
  + It adds classes to the html element that explain precisely what features are and are not natively supported.

1. What are limitations of **Modernizr**?

* It depends on Javascript!

1. How do you make your pages load fast? (combine multiple js files to reduce the resources, use CSS technique – sprite image – to display icons without making too many requests)

* In short, reduce the size of the responses and the number of requests needed to be called to make the page load faster (minification + combination / load on-demand).
* We can also utilize the ‘async’ and ‘defer’ attributes on <script> tag to make requests for javascript happen in parallel.
* This question can also be used to see if the candidate have any knowledge about module script loader like **RequireJS**, **$script.js, …**

1. What are useful aspects of HTML5 in your opinion? (canvas, local storage, semantic tags…)
2. Have you ever done any context sensitive menu? (e.g. jQueyUI has context menu component)

* How would you replace this behavior on a touch device, as they don’t support mouse event?

## [INTERVIEW CONVERSATION OF](#_top) DINH LAM

1. How do you use D3 in your project?
2. How do you organize your web application on AngularJS?
3. Does the Scope bind the view with the model or bind the view with the controller?

* Controller acts as a decorator for the scope. The controller add more states, function into the scope. The view then read/use those states, function of the scope. So that means scope bind the view with the ‘model’ (scope’s state).
* There is also a way to have the controller as the model, as used by controller-as syntax in the ng-controller directive. Basically, it assign the controller object to scope.$ctrl property.

1. Suppose that you have big model data, sent from server side and will be used in multiple views. How do you handle this use-case?

* The data is stored in a service, the service can also act as an in-memory cache. Thus this can be reused in other views, for example, each view has its own controller, we can access the service from the controller and check whether it has the needed data, if there is none, get it from the server, when it finishes, assign the data to the service and get assign the data’s reference to the scope property, then the view which is bound with the property will render it.

1. How do you perform code review?
2. Suppose that you have hundreds of javascript files, HTML pages… how do you handle loading necessary javascripts on demand without loading all the items? (=> minify JS files, combine multi files into one …)

* See Thien Truong’s question #12.

1. Have you heard/used ModuleLoader in javascript?
2. Have you known RequiredJS?

* 7 & 8 are linked questions. It solves the problem of script loading on demand,

1. Have you used UnderscoreJS?
2. What are toughest problems/algorithms that you have implemented, dealt with?
3. If you want to design a page for both desktop and mobile, what would you do?

* See Thien’s question

1. Is there any limitation with using MediaQueries?

* Image Resizing.
  + Responsive web design resizes images to the mobile device’s screen. The full image is downloaded on a mobile device and resized to fit the screen. This consumes unnecessary CPU and RAM.
* Speed
  + Mobile users usually have less speed compared to desktop users. Responsive design does not remove any code that may not be used. The unnecessary JavaScript or HTML code is not removed and is still downloaded. This makes the site slower.

1. Do you use any tool to create the reports?
2. What table or grid component did you use in your project?
3. How do you handle sorting, paging…?
4. How do create your List component from scratch with sorting/paging capabilities?