Euroffice Development Test

Thank you for taking the time to complete the Euroffice development test.

Please complete the Task below and submit your test in a Zip file with you name as the title or provide link to a git repository.

The folder should contain

1. A Markdown file containing the answers to the questions.
2. A folder containing your solution

# Coding Test

* Please spend no longer than 2 hours. If you are not finished please submit what you have. You can add more details in the questions.
* Use a .Net language.
* Demonstrate your skills considering the role.
  + UI developers should put focus on MVC, JavaScript, HTML and CSS
* Use any frameworks you like.
* You can create any type of application you like (console, web, desktop…)
* Remember we like testing.

## Task

The task is to create an application that accepts a category and shows results based on that category.

Here are the two API endpoints that can be used.

|  |  |
| --- | --- |
| Categories |  |
| Description | Returns a list of image categories |
| URL | http://thecatapi.com/api/categories/list |
| Result Example | <response>  <data>  <categories>  <category>  <id>1</id>  <name>hats</name>  </category>  </categories>  </data>  </response> |

|  |  |
| --- | --- |
| Results |  |
| Description | Returns a list of images |
| URL | http://thecatapi.com/api/images/get?format=xml&results\_per\_page={page\_count}&category={category\_name} |
| Result Example | <response>  <data>  <images>  <image>  <url>http://image.jpg</url>  <id>5if</id>  <source\_url>http://thecatapi.com/?id=5if</source\_url>  </image>  </images>  </data>  </response> |

## Acceptance Criteria

Given I am a user running the application

And I see a list of Categories

When I select a Category

Then I see images related to that category

# Question

Please answer all these questions in a Markdown document.

1. How long did you spend on the coding test?
2. What would you change / implement in your application given more time?
3. Did you use IOC? Please explain your reasons either way.
4. How would you debug an issue in production code?
5. What improvements would you make to the cat API?
6. What are you two favourite frameworks for .Net?
7. What is your favourite new feature in .Net?
8. Describe yourself in JSON.

# Answers

## How long did you spend on the coding test?

Just over 2 hours (The webapi endpoints provided above had CORS restrictions) and the images endpoint on produce only a single image regardless the value provided on result per page value.

## What would you change / implement in your application given more time?

* Improve lot more on Unit Testing to add more details testing, testing on JQuery code, unit testing around Web API 2 endpoints.
* Improve UI (front end with Bootstrap/CSS). Use proper Layout pages.
* Remove any hard coded values and move them somewhere separate to pick during run time i.e. end point Urls
* Implement the my own web api to provide result based on ‘ResultPerPage’ parameter

## Did you use IOC? Please explain your reasons either way.

I created a mock webAPI i.e. "api/EuroOffApi/GetCatXml".

* I have used Ninject IoC to provide different Mock repositories for my own web api. This allowed me to inject different data during unit testing without making changes to switch them.

## How would you debug an issue in production code?

* Highly recommend that you setup similar environment in Staging to mirror the Production and reproduce the errors that need fixes.
* Also inside coding you should have lots of error handling with try catch and log them with full error trace into separate database. So you can study errors in full details from this log and also collect other patterns around errors which occurring.
* For client side debugging all main web browsers prove developer tools these days. So we can use many features that it provides to debug JavaScript, Jquery and CSS side of debugging and even try the fix pretty quickly style issues then and there.
* The same tools allow to check request and data exchanged over http calls. This gives another means of debugging capabilities.
* Furthermore you can setup remote debugging and attach the remote debugger from Visual Studio

## What improvements would you make to the cat API?

* As it seems the web api only to send simple data, it would be best to send this data in JSON format. JSON can describe data object hierarchy so it will take less amount network bandwidth and data size to send similar XML format. JSON is natively parsed to JavaScript so will provide performance there. JSON structured objects are pretty easy to exchange between MVC C# server side and Javascript/Jquery Ajax calls.
* WebAPI endpoints should follow REST architect to make URLs readable.
  + api/EuroOffApi/GetImagesXml/{cat}/{resultperpage}
* CORS need to be implemented so other web application will have access use the webapi services.

## What are you two favourite frameworks for .Net?

* MVC and Web API(REST)
* Bootstrap and JQuery/Ajax
* Angular JS and Knockout
* Entity Framework
* Ninject/MS Unit Test
* SingalR/NodeJS
* Looking to learn Jasmine type framework for JavaScript unit testing

## What is your favourite new feature in .Net?

* The Task-based Asynchronous Pattern(TAP) :Make webpages very smart/responsive
* In C# 6, Null conditional operator, String Interpolation
* Combining MVC and WebAPI to one framework / WebAPI with REST Principles

## Describe yourself in JSON.

JSON is great for exchange data between applications and platforms over http protocol. It can provide maximum performance transfer the data over, in rest as well as parsing and manipulation. I have also described advantages of using JSON in an answer above.

{

"Person":

[

{

"id": "1",

"Title": "Mr",

"name": "Siraj",

"age": "39"

},

{

"id": "2",

"Title": "Miss",

"name": "Christine",

"age": "38"

}

]

}

OR

{

"category":

[

{

"id": "1",

"name": "Hats"

},

{

"id": "2",

"name": "Jackets"

}

]

}

.