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1. When do you use Web Api over MVC?

**Answer:**

Web API is light weight Architecture used to create Http Services which returns only the required data however MVC is used to create web applications that returns views and data both.

Web APIs are used over MVC to service different different devices using REST-ful services over .Net Framework. Data can be exposed in JSON, XML or any required format. However, using MVC data can be exposed only in JSON format.

1. Create MVC route for showing dresses with color 'blue' and size '10' (Use url of your choice )

**Answer:**

Following code is required to be written in “RouteConfig.cs” under folder “APP\_Start”:

routes.MapRoute(

name: "Default",

url: "{controller}/{action}/{color}/{size}",

defaults: new { controller = "Home", action = "Index", color="blue", size = 10 }

);

And Controller will have an Action method like:

public ActionResult Index(string color, int size)

{

if (color == “blue” && size == 10)

{

return View();

}

Else

{

return HttpNotFound();

}

}

1. Which ORM do you prefer to access database and why? How does a choice of ORM impact application performance?

**Answer:**

I would prefer to use Entity Framework as ORM to access the database and the reasons to use Entity Framework are following:

* + - 1. Developers can work on high level of Abstraction while working with data base.
      2. Less code is needed then traditional data base access methods in .Net framework
      3. Entity Framework enables developers to work on domain specific objects.
      4. Last but not the least, Entity Framework can work easily with .Net Framework.

Impact of ORM on Application Performance:

ORM gives a heavy structure to code to make developers life easy however this heavy framework is a reason to slow down the performance of application.

In practical term this has been observed that despite having heavy framework if ORM has been used wisely its performance of application is still better then accessing the database without it.

1. Do you recommend any design patterns to access database?

**Answer:** Data Access Object (DAO)

1. How important is separation of concerns?

**Answer:** Separation of concern is one of the essential principles of software engineering. It says that the software should be decomposed in such a way that different concerns/aspects of the problem are solved in well separated part of software. By doing this software become more stable, easy to maintain, easy to re-use, easy to extend and more secured.

Separation of concerns helps in following type of scenarios:

1. If all the code for a particular behaviour of the application is separated out, then you will only have to change code directly associated with your new feature. Which should be less code to change.
2. If the behaviours you are interested in are neatly separated from the rest of the application, it is more likely you will be able to swap in a new implementation without having to fully understand or manipulate the rest of the program. It should also be easier to find out which code you need to change.
3. Code that you do not have to change is less likely to break than code that you do change. So splitting up the concerns helps you to avoid breakage in unrelated features by preventing you from having to change code that they could call. If your features are mixed up together you might change the behaviour of one by accident while trying to change another one.
4. If your architecture is agnostic to technical or business logic detail, then changes to implementation are less likely to require new architectural features. For example, if your main domain logic is database agnostic then supporting a new database should be as easy as swapping in a new implementation of the persistence layer.
5. What is dependency injection?

**Answer:**

Dependency Injection(DI) means to decouple the objects which are dependent on each other. Say object A is dependent on Object B so the idea is to decouple these objects from each other. We don't need to hard code the object using new keyword rather sharing dependencies to objects at runtime despite compile time.

Different type of Dependency Injection is:

* 1. Constructor Injection
  2. Property Injection
  3. Method Injection

1. Where do we need DTO’s?

**Answer:** Data Transfer objects are part of common framework developed for multiple applications. The framework has multiple layers but one common object to transfer the data.

DTOs are needed when we it is required to pass the data with multiple attributes in one shot from client to server or vice versa. For example: Data reader can be converted into data access object.

1. Create DB tables for below scenario -

* A popular fashion store in Australia is opening their base in Hongkong. The product range is same across both countries.
* But the inventory for each country is maintained separately in their respective warehouses.
* Create DB tables to manage products and inventory for respective countries.

1. Write program using scenario in above question to -

* List products based on users selected country
* The product list should have following information
  + Product name
  + Price
  + If sold out or not.

**Answer :** Sample running application attached

1. Redirect old /Category/{categoryname} URL to new /Shop/{categoryname}

**Answer:** Same can be implemented by

* + - 1. MVC routing, example given in question no. 2.
      2. URL Rewriting using URL rewrite module

1. Add IIS Rule to redirect all the URL request to HTTPS except this URL "/Util/Test"

<rewrite>

<rule name="Redirect to HTTPS">

<match url="(.\*)" />

<conditions>

<add input="{HTTPS}" pattern="OFF"/>

<add input="{/unit/test}" pattern="" negate="true" />

</conditions>

<action type="Redirect" url="https://{HTTP\_HOST}{HTTP\_URL}" redirectType="Permanent" appendQueryString="false" />

</rule></rewrite>

1. Write a snippet to check if the cart is eligible for "buy 2 get another 1 free promo". Free should be lowest value from cart.

Function will take cart object as input and mark item as free

e.g. table structure

Cart {

OrderId int,

OrderDate date,

HasPromo bit,

List<CartItem> Items,

}

CartItem {

OrderId int,

OrderRowId int,

ProductId int,

UnitPrice money,

OrgUnitPrice money,

Qty int,

RowTotal money

}

1. You need to add a reference to a web service to your web application, where is a suitable place to add this reference
2. Web Layer b) Service Layer c) Data Layer

**Answer:** Service Layer

16) If you are allowing users to upload large videos on your site, how do you increase the upload limit for your website?

**Answer: By Adding the following tag in web.config file as:**

<configuration>

<system.web>

<httpRuntime maxRequestLength="xxx" /> <! --xxx is in KB, like 10240 = 10MB-->

</system.web>

</configuration>

However, if you are running on IIS7+

<system.webServer>

<security>

<requestFiltering>

<requestLimits maxAllowedContentLength="52428800" />

</requestFiltering>

</security>

</system.webServer>

Or “Maximum Allowed content length” can be updated on IIS directly.

17) How do you rate yourself on each of the following ADO.net components Dataset, Data Reader, Data Adaptor, Command, Connection.

**Answer: I am consider myself as expert in using ADO.Net components.**