**1) You have a CSV file that has 10 million of rows. Your task is to insert these rows to the MS SQL Server 2014 database in a most efficient and fastest way. What would your approach be to accomplish this task?**

Answer:

For inserting 10 million rows, I had been done it by using parallel threads. First, convert all rows in C# list of objects then insert data in MS SQL database with 100 rows using parallel threads one by one.

2) **Your task is to build a web service that will be heavily used by third party companies. The estimated load will be around 1000 requests per second. You are asked to save all the requests to the database and to make sure that the response is in less than 0.1sec. What technologies would you use to achieve the goal?**

Answer:

I can manage background thread to save all the requests to the database with the required parameter after running that thread I want to return that web service. data will be saved in DB by background thread. But there will be internet lacking time issue. So I would like to host my web service on any microservice provider server like Azure Trigger Function, AWS Lamda.

3) CREATE TABLE [dbo].[User](

[Id] [int] IDENTITY(1,1) NOT NULL,

[Login] [varchar](50) NOT NULL,

[Lastname] [varchar](50) NOT NULL

CONSTRAINT [PK\_User] PRIMARY KEY CLUSTERED

(

[Id] ASC

)

)

**You have a user table that is described above. You are asked to do the modifications to the table that only unique login names could be stored in the database and username could have any Unicode value. What changes you will do?**

Answer:

Nvarchar column can store Unicode Value so first, we have to alter the table LogIn column to support Unicode Value.

ALTER TABLE [dbo].[UserInfo]

ALTER COLUMN [Login] nvarchar(50) NOT NULL;

After altering the table LogIn column, we have to alter the table LogIn column to support unique.

ALTER TABLE [dbo].[UserInfo]

ADD CONSTRAINT UQ\_Login UNIQUE ([Login]);

**4) You have developed a web service and you are asked to provide a report that would show the number of active requests coming to the service...What technologies and principles would you use to complete this task?**

Answer:

I can store request information in DB. When a request comes to any web service, i can store the request. After completing the store of that information in an asynchronous way then i can show any type of report.

### 5) What is your opinion about “Agile” software development principles? What are the key aspects that you like most of it?

### Answer:

### We can project more simple to implement it

### We can split tasks into small functions, then we can provide them to clients.

### very good practice to collaborate with clients. So the client can give a change.

### we can implement the agile method in projects very efficiently.

### it is easy to adaptable for all team members.

**6) There is a web application and it needs to have a paging (data is stored in database). How would you implement it depending on the amount of data:**

**a) Up to 50k rows**

**b) Up to 250k rows**

**c) More than 1 million rows**

Answer:

As per my understanding of Redis. We can implement this problem. Otherwise, if we will do it on our own it takes time. Just give an option tor get a specific amount of data. Write optimize the query for getting data from DB.

**7) There is a task to read data from the database (10 million rows), apply a custom logic to each row and sink it to external source. How would you achieve the result in the most efficient way?**

Answer:

By using cursors

**8) We have a task to make a cache module inside application for storing numbering plan (Mobile telephone ranges). What type of data structure would you choose to use for storing data and why? Would you make any modification to data?**

**Data example:**

**NumberFrom, NumberTo**

**995552003000, 995552003999**

**995552004000, 995552004999**

**Etc.**

Answer:

quicksort sorting is good for the number of data. it is very faster.

No need any modification to data.

**9) What are the main reasons (your opinion) of using interfaces in C#?**

Answer:

Support multiple class inheritance

for implementing Inverson of Control or Dependancy Injection

for parallel application development

for developing loosely coupled systems

for writing testable code

**10) You are asked to provide a scheduled report that takes data from Database table that has more than 100 mln records. Real time aggregation is too slow to accomplish the task…What would be your proposal for this kind of a task?**

Answer:

As per my understanding of Redis. We can implement this problem.

**11) What would you use for communication between microservices and why?**

Answer:

Every microservices has an endpoint, So I will use HTTP to communicate between microservices.

Because HTTP is a very useful option to communicate service to service

**12) How would you handle a task for creating a service that should handle various job’s at specific times or periodically?**

Answer:

Actually, I am not clear about your problem. But as my understanding in C#. we can use async to make that method asynchronous, then that method can handle various jobs at specific times or periodically.

**13) How would you suggest improving the performance of a service that is doing many crud operations using Entity Framework?**

Answer:

when getting data only for reading that time disable object tracking.

Create a single Entity Model for every DB Object. Do not put all DB Objects in an Entity Model.

Getting only needed data from DB.

Optimize LINQ Query.

Try to avoid using DB Views.

**14) You need to make a service that takes tasks from a database and processes them. How will you guarantee that the one task is processed only once?**

Answer:

Actually, I do not understanding your problem.

**15) You are asked to code new feature to existing project. The main branch of the project is named “Master”. The code is stored in GIT. To introduce new code to the master branch, code review is needed. How will you make sure that before code is merged to the branch, code review is done?**

Answer:

when I will commit my new feature code in “Master”. GIT acts like this comment that will be part of the review.

**16) For what kind of tasks you would use Redis as a database?**

Answer:

I do not work on Redis as a database.

**17) SELECT Id FROM [dbo].[Users] where Upper(Login)='ADMIN' . Please explain, why this query might work not efficiently.**

Answer:

Because in MS Sql Login is a keyword. We should use like [Login]

**18) What is the difference between Struct and Class in C#.**

Answer:

Structs are value types - Classes are reference types

Structs do not support inheritance - Classes support inheritance

**19)** class Program  
     {  
         static void Main(string[] args)  
         {  
             int x = 10;  
             Console.WriteLine("First call: {0}", x);  
             Multiplication(ref x);  
             Console.WriteLine("Second Call: {0}", x);             
             Console.ReadLine();  
         }  
         public static void Multiplication(\*what should be passed here\*)  
         {  
              a \*= a;  
         }

**What whould you pass to the \*Multiplication\* method, that on the second Console output x value would be printed 100?**

Answer:

ref int x

**20) Benefits of using asonchrynous programming? When should it be used?**

Answer:

asynchronous programming increases performance and responsiveness.

asynchronous programming increases performance and responsiveness. when you want to run parallel many programs in one form and do not want to depend on another program, that time we can use asynchronous programming.

**21) what are the common pitfalls who can lead to memory leak?**

Answer:

When programmers create a memory in the heap and do not dispose of it properly. So as programmers we want concerned about it.