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Position: AI Application Developer

**Assessment (45 minutes)**

**C#**

1. How do you use regex to extract content from a text that begins with abc and ends with xyz? Note that abc and xyz cannot appear in the result set. For example, there is a section called abc 23km xyz eba xyz abc eee3 xyz.

- We can use a regular expression with lookbehind and lookahead assertions to extract text between abc and xyz

2. Please explain what reflection is and how to use it.

- The reflection is a feature in C#, which allows the program to inspect and interact with its own metadata & Structure and to use it we have to use 'System. Reflection' namespace.

3. Please explain where Expression is used and the difference between Action and Function.

- The expression is a piece of code that we can inspect, analyse or compile at run time.

Action: - represents a method that does not return value i.e. void also can take 0 to 16 i/p parameters

Function: - It represents a method that returns a value also it also take 0 to 16 parameters but here the last type parameter is always a return type

4. What are the functions of AddSingleton, AddTransient, and AddScoped in the IServiceCollection service registration in DotNet, and what are their differences?

- This functions are for DI or Dependency Injection where

AddSingleton : - Creates only one instance of the service for the entire application lifetime.

AddTransient : - Creates a new instance every time it is requested.

AddScoped : - Creates one instance per HTTP request

5. How can you use LINQ or EF to paginate a database and retrieve the ten records on the second page?

**SQL**

1. How can I group and sort the following data and then take the highest grade in each class?

| Class | Student | Grade |

|-----|-----|-----|

|1 | ABC | 90 |

|1 | DEF | 80 |

|2 | `XYZ` | 88 |

|2 | `MSA` | 95 |

- **SELECT Class,**

**MAX(Grade) AS HighestGrade FROM Students GROUP BY Class ORDER BY Class;**

2. In SQL, there are Date, DateTime, and DateTimeOffset types. What are their differences?

- **Date : - Stores only the date part**

**DateTime : - Stores both the date and the time**

**DateTimeOffset : - Stores both the date and the time along with the time zones**

## AI

### 1. About AI-Assisted Development

Have you used AI models(e.g.,LLM) in your development work to address real-world needs? If so, please describe a typical use case in detail. For example, when using an AI model to assist with code refactoring, complex algorithm implementation, or requirements-to-code translation, what are the model's inputs and outputs?

- **Actually I have use the Mistral 7B Parameters model in the one of my project and that projects is called as paper to project here the users uploads their research paper and my model will generate the entire project in python talking about the models code refactoring, complex algorithm implementation, or requirements-to-code translation the input will mostly be a prompt along with the RAG's OCR'd input and o/p we can get as per our need mostly correct or refactored code**

## Python

### 1. About Your Python Application Experience

Please share a real-world project or development scenario in which you used Python.

- **I have developed an ISLD app i.e. Indian Hand Sign Detect App here we are detecting the hand signs of deaf and mute people and converting it to the text and speech so that normal person can understand what the impaired person want to say also the another part of this project is the**

**normal person will speak in his native tong and we are converging that to in signs that means the communication gap between the normal persons and the deaf persons will be bridged**

**Other:**

1. What are the differences between FTP, FTPS, and SFTP? Also, what is the difference between Active and Passive in FTP?

**- The FTP is File Transfer Protocol here the data is sent over a separate port with no encrypt**

**Active : - here server connects to random port**

**Passive : - here server tells the client which random port to use**

**- The FTPS is extension to the FTP it secure FTP via Auth CLS commands**

**- SFTP is SSH File Transport Protocol it works with the secure shell Encrypting everything**

2. In Vue3, there are different templates. How are parameters and functions passed between parent and child components?

3. What is the concept of Single Sign-On (SSO)?

**- The SSO is concept where users logins once and access multiple independent apps without login in again**