1. [Parallel Programming] - 2 mins
    - What is the difference between Parallel Programing and Asynchronous Programing? Have you done any multi-threaded or parallel programming? Give an example of how one has been used in the project described in your resume.

Parallel programming means executing multiple tasks on multiple cores simultaneously. The goal of parallelism is performance of the application.

Asynchronous programming is only one thread, which in time slicing between tasks. Asynchronous code doesn't use threads
The goal of Asynchronous programming is all about making the application usable, non-blocking main thread.
The async and await are markers which mark code positions from where control should resume after a task (thread) completes.
The asynchronous programming is not about improving performance and creating new threads.

I used Multi-threading in the reporting application to process the different modules of the sales and marketing reports simultaneously, and finally the application returns the overall results of the multi tasks in xml format.

I used Asynchronous methods to call external web services without blocking the UI thread.

2. Can you tell us what SOLID stands for in OOP? - 1 mins

    SOLID is an acronym for 5 important design principles when doing OOP (Object Oriented Programming).

    S — Single responsibility principle
    O — Open/closed principle
    L — Liskov substitution principle
    I — Interface segregation principle
    D - Dependency inversion principle

3. [DevOps] - 2 mins
    - Do you have any experience with CI/CD? Explain the process.

    Yes, I am having 3 years of experience in developing the CI/CD pipeline projects.

    <u>The CI/CD Process:</u>

    1. CI and CD are the software Development best practices.
    2. I created the REST APIs using C#.Net and Pythons and deploy in Linux based Docker applications in AWS.
    3. For Continuous Integration we used Jenkins tool.

4. I installed Version control tool GIT, Building tools Maven (Java Applications), MSBuild(C#.Net applications) and PyInstaller (Python applications) and testing tool Selenium with Jenkins plugins.
5. Created Jenkins pipeline project using Declarative pipeline code to automate building and testing the applications.
6. The continuous integration artifacts are used to create AWS CloudFormation templates as Infrastructure as Code in JSON format for provisioning and maintaining the infrastructure in AWS cloud.
7. AWS CloudWatch and CloudTrail are used to monitor the infrastructure for alerts and logging.

4. [Coaching/Mentoring] - 2 mins
    - Any Experience with Mentoring/Coaching Junior Team Member? What are some techniques you use for mentoring junior developers?

    1. I'll tell the junior developers how to accomplish what they are trying to do.
    2. I'll make myself available for their questions.
    3. To maintain the good development habit, I'll insist them to follow the best practices in coding the applications.
    4. Conduct design review before they start working on the project.
    5. Conduct code review after they completed the development.
    6. Insist on the Unit testing and documentation before deploys the code to testing environment.
    7. Make them work on different projects to get familiarize in all the projects.

5. [Databases] - 3 mins
    - What is the difference between Relational and Non-Relational Databases?

Relational Database	Non-Relational Database (NoSQL)
Structured Database with predefined schema	Non-structured database with dynamic schema.
Easy to update as data and requirements change.	Changing the schema structure is extremely expensive and time consuming.
Table based objects	Document based objects
Vertically scalable	Horizontally scalable

    - What type of NoSQL databases are you familiar with? Where did you use it and why?

      I am familiar with MongoDB and AWS DynamaoDB databases.

      I used the MangoDB to the following scenarios:

      1. To Capture the APIs stateless request and response as documents in MangoDB for troubleshooting.

2. The B2B applications mapping documents are stored in MangoDB as a centralize reference.
3. The application error codes and descriptions based on the business interpretation are stored in MangoDB as a centralize reference.