Select one of the 4 options provided below to use as the basis for your take-home project.

Option1: VPC and Security Best Practices:

Task: Design and implement a CDK project to create a secure VPC environment with public and private subnets. Ensure proper network isolation, implement security groups, and configure a bastion host for secure access to resources within the private subnet.

Option 2: Automated Backup Solution:

Task: Create a CDK project that sets up an automated backup solution for an existing Amazon RDS database. Implement backup schedules, retention policies, and a mechanism to trigger restores.

Option 3: Multi-Environment Deployment Pipeline:

Task: Create a CDK project that deploys a simple web application (e.g., a static website) to multiple environments (e.g., development, staging, production). Implement environment-specific configurations, and set up a CI/CD pipeline using AWS CodePipeline and CodeBuild.

Option 4: IAC for ECS

Task: Design and implement an AWS CDK project that creates an ECS cluster, a sample Fargate service, and an associated ALB (Application Load Balancer). Ensure proper networking, security, and scalability.

Submission Guidelines:

1. Submit your CDK project code along with any configuration files.
2. Include documentation in a README file explaining the design choices and how to deploy and test.
3. Compress the entire project folder into a single zip file for submission. Alternatively, you may share the GitHub URL where your code is hosted.

Evaluation Criteria:

- Correctness and simplicity of the CDK project.
- Adherence to security & CDK best practices.
- Clarity and completeness of documentation.
- Successful deployment and testing of the solution.
- Code organization and readability.
- Use of latest CDK libraries and modules