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Advance Devops Assignment 2

create a restart with serverless framework
Creating RESTART with serverless framework
is an efficient way to deploy serverless application that can scale automatically without managing servers

- (i) serverless framework
- (ii) Serverless architecture
- (iii) REST API

steps for creating REST API for serverless framework:

Install serverless framework :

You start by installing serverless framework CLI globally using node package manager

This allows you to manage serverless application directly from your terminal .

Creating a node : serverless project

A directory is created for your project , where you will initialize a serverless service (project) . This service will house all your lambda function configurations and cloud resources ,

Project structure :

The project `cd` creates essential files like `handler.js` (which contain code for lambda functions) and `serverless` .

- create a REST API RESOURCE :
- 4) In the serverless.yml file you define function that handles post requests of HTTP .
- 5) Deploy the service ! with the 'sls deploy' command severless framework Packages , your applications , uploads necessary resource to AWS and set up infrastructure .
- 6) Testing the API : once deployed you can test REST API using tools like curl or postman by making post request to generate API .
- 7) ~~Storing data in Dynamo DB~~ : To store submitted candidate data , you integrates AWS Dynamo DB as a database .
- 8) Adding more functionalities : Adding functionalities like 'list all candidates , get candidate by ...'
- 9) AWS IAM Permissions
You need to ensure that severless framework is given right permission to interact with AWS resource like dynamids

10) monitoring and maintenance

After deployment serverless framework is given right permission to interact with AWS resources like dynamodb.

11) case study for sonarqube

Creating your own profile in sonarqube for testing project quality. Use sonarqube to analyze your github code. Install sonarlint in your ide and analyze java code. Analyze python project with sonarqube.

→ sonarqube is an open source platform used for continuous inspection of code quality.

12) Profile creation in sonarqube

Quality profiles in sonarqube are essential configurations that defines rules applied during code analysis. Each quality has a quality profile for every supported language with default being 'sonar way'. profile comes built in for all languages. custom profiles can be created by copying or extending existing ones. Copying creates an independent profile, while extending inherit rules from parent profile and reflects future changes automatically. You can activate or deactivate rules.

2) using sonarcloud to analyze github
sonarcloud is cloud-based counterpart of sonarqube that integrates directly with gitHub, Bitbucket, Azure and gitlab repositories. To get started with sonarcloud via GitHub, sign up via sonarcloud product page and connect your GitHub organization or personal account. Once connected, sonarcloud mirrors your GitHub setup with each project corresponding to GitHub repository.

3) Sonarlint in Java IDE:

Sonarlint is an IDE that performs on-the-fly code analysis as you write code. It helps developers detect bugs, security vulnerabilities and code smells directly in development environment such as Idea or Eclipse.

4) Analyzing python projects with Sonarqube:
Sonarqube supports Python test coverage reporting but it requires third party tools like coverage.py to generate the coverage port. To enable coverage analysis, run your build process so that coverage runs before sonar scanner and ensure report file is saved in different path.

- 5) Analyzing Node.js projects with SonarQube
For Node.js project SonarQube can analyze Javascript and Typescript code. Similar to the Python setup, you can configure SonarQube to analyze Node.js projects by installing the appropriate plugins and using sonarScanner to scan the projects. SonarQube will check the code against industry standard rules and best practices, flagging issues related to security vulnerabilities, bugs and performance optimization.
- 3) At a large organization, your centralized operations team may get repetitive infrastructure request. You can use Terraform to build a self-service infrastructure. Terraform's self-service infrastructure provides a powerful use case in large organizations.
- (i) Self serve infra : By using Terraform modules, you can create reusable and standardized infrastructure config. Module creation in Terraform, main.tf, variables.

Also after module creation its standardization is equally important .

- ii) Enabling self service for product Team
create a self service or version
control access and provide pre-configured
Terraform workflows .