**AWS Assignment 3**

1. Explain the concept of auto-scaling.

AWS Auto Scaling analyses your applications and changes capacity automatically to provide consistent, predictable performance at the lowest feasible cost. It is simple to build up application scaling for many resources across different services with AWS Auto Scaling in minutes. The service provides a simple yet effective user interface for creating resource scaling strategies. AWS Auto Scaling simplifies scaling by providing suggestions that allow you to maximise performance, costs, or the balance of the two.

1. Explain Cloud Formation Solution.

AWS CloudFormation is an AWS tool that automates the configuration of AWS resources by using template files. It is used to automate the setup of workloads running on AWS's most popular services. It facilitates the deployment of several instances of the same resources almost instantly using a single template. Individual services or resources, as well as many resources, can be managed by a single CloudFormation template. It can increase the overall security of your AWS environment by lowering the likelihood of mistakes.

1. Mention and explain AWS services that are not specialized to a specific location.

* CloudFront - ensures that end-user requests are served by the closest edge location.
* CloudWatch - monitor resources across regions
* IAM - provides fine-grained access control across all of AWS
* Route53 - automatically answer queries from the optimal location depending on network conditions.
* S3 - is an object storage service that stores data as objects within buckets.
* STS - enables you to request temporary, limited-privilege credentials for IAM users or for users you authenticate
* VPC Peering - networking connection between two VPCs that enables you to route traffic between them
* WAF - web application firewall that helps protect your web applications or APIs against common web exploits and bots that may affect availability, compromise security, or consume excessive resources.

1. What's the difference between pausing and terminating an Amazon Elastic Compute Cloud instance?

The EC2 "stopped" status indicates that an instance has been shut off and is no longer available for usage. It is essentially a temporary shutdown for when you are not using an instance but will use it later. To terminate, on the other hand, is to delete something permanently. Because terminated instances cannot be recovered, use this when you're done with them.

1. Describe how to set up CloudWatch to recover an EC2 instance.

* Open the Amazon EC2 console.
* In the navigation pane, choose Instances.
* Select the instance that you want to configure.
* Choose Actions, and then choose Monitor and troubleshoot. Then, choose Manage CloudWatch alarms.
* Choose Create an alarm.
* For Alarm notification, choose an existing Amazon Simple Notification Service (Amazon SNS) topic. To create a new topic, see Creating an Amazon SNS topic.
* Toggle on Alarm action, and then choose Recover.
* For Group samples by and Type of data to sample, choose an appropriate statistic and metric for your use case.
* For Consecutive period and Period, specify the evaluation period for the alarm.
* (Optional) Modify the automatically created Alarm name.
* Choose Create.