

# Syllabus :

## Python on AWS

(python development on aws)

### Topics Covered as Follows

#### **AWS & IAM Introduction**

- Aws introduction and creating account
- Aws region overview
- What is IAM
- Creating IAM user
- Aws console UI changes
- Sign in As iam user
- IAM user group
- Boto3 and AWS Cli configuration
- Changes in IAM creating programmatic Access Key
- Create users with python & boto3
- Getting All users from AWS with python
- Updating user with python and boto3
- Creating custom policy with python and boto3
- Listing All policies in AWS with python
- Attach policy to user with python
- Detach user policy with python
- Creating IAM user group with python and boto3
- Attach policy to IAM user group with python
- Adding user to IAM users group with python

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- Detach policy from user group with python
  - Create access key for the user
  - Creating login profile with python and boto3
  - Delete user with python and boto3
  - Delete user from group

## **IAM with AWS cloud shell**

- AWS cloudshell create IAM user
- AWS cloudshell IAM login profile
- AWS cloudshell IAM user policy
- AWS cloudshell Create access key
- AWS cloudshell create group

## **Advanced IAM with python**

- Create AWS IAM roles with python
- Attach policy to role with python
- Create instance profile
- Add Role to IAM Instance profile with python
- Create EC2 instance with IAM role
- IAM conditional policies with python
- IAM user tag management with python

## **Amazon web services Dynamo DB**

- Introduction to dynamodb
- Creating table in dynamodb
- DynamoDB read and write capacity units
- Dynamodb partialQL editor
- Dynamodb Global secondary index (GSI)

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- Inserting data to dynamo db with python and boto3
  - Insert data with boto3 client
  - Batch writer with python and boto3
  - Describe dynamo db tables with python and boto3
  - Listing dynamo db tables with python and boto3
  - Update dynamo db tables with python and boto3
  - Creating backup for dynamo db with python and boto3
  - Get item from dynamodb with python
  - Get batch item with python and boto3
  - Get item with client in python
  - Scan dynamodb table with python and boto3
  - Creating dynamodb table with python and boto3
  - Loading JSAON file to dynamodb table
  - Get the movie data from dynamodb with python
  - Updating the movie data with boto3
  - Delete movie with python and boto3
  - Get All movies with query in python and boto3

## **AWS simple storage service**

- Amazon S3 introduction
- Updating files to s3 bucket
- Creating bucket with client in boto3 and python
- Uploading image to bucket with boto3 and python
- Listing all buckets with boto3 and python
- Deleting all the buckets with python and boto3
- Delete not empty bucket with python and boto3
- Upload file with python and boto3
- Download file with python and boto3
- Listing files from aws bucket with python and boto3

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- Get summary of object with python and boto3
  - Copy of an object to another bucket with python
  - Delete an object from bucket with python
  - Hosting static website in amazon s3
  - Get website configuration from bucket with python
  - Delete Attached policy from bucket with python
  - Delete website from bucket with python

## **AWS s3 Encryption and policy**

- S3 Encryption introduction
- Prevent encryption objects to s3
- AWS S3 Encryption with python
- Check S3 encryption with python
- Add policy to bucket with python
- Get Bucket policy with python
- Delete bucket Encryption with python

## **Amazon RDS**

- Introduction to Amazon RDS
- Creating Mysql database Instance in Amazon RDS
- Amazon RDS charges
- CRUD operation with python and boto3
- Creating mysql instance with python and boto3
- Show mysql tables with python
- Inserting Data to mysql database with python
- Showing data from mysql database with python
- Update data in mysql database
- Delete mysql db instance
- Create postgresql db instance
- Checking connection of postgresql Database

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- Creating table in postgresql database
  - Inserting data to postgresql table
  - Delete data in postgresql
  - Update the data in Mariadb with python
  - Select all data from Mariadb with python
  - Delete data in Mariadb with python
  - RDS oracle database prices

## Amazon Elasticache

- Introduction to AWS Elasticache
- Testing Redis Elasticache with EC2

## EC2

- Introduction to Amazon ec2
- Creating linux in ec2
- Launching windows server instance
- Creating linux instance for Django deployment
- Run EC2 linux instance with Mobaxterm in windows
- Installing python and django in linux ec2 instance
- Creating Django project and model
- Deploy Django to ec2 linux instance
- Describe Ec2 instance with python and boto3
- Creating key pair for ec2 instance with python
- Creating security group for ec2 instance with python
- Creating inbound rules for ec2 instance with python
- Creating ec2 instance with python and boto3
- Get ec2 public ip with python and boto3
- List running with python and boto3
- Terminate ec2 instance with python and boto3

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- Describing EC2 securitygroup with python
  - Delete EC2 security group with python
  - Delete ec2 keypair with python

## **More on ec2**

- Amazon Ec2 user data
- Amazon ec2 security groups
- Amazon ec2 userdata with python
- Amazon ec2 and iam role
- Amazon ec2 storage introduction
- Amazon ebs
- Ebs snapshot
- Creating ebs with python and boto3
- List Ec2 volumes with python
- Search Ec2 volumes with python
- Attach Ebs to ec2 with python
- Deatch Ebs from ec2 instance with python
- Increase size of ebs volume with python
- Delete Ebs volume with python
- Create Ebs snapshot with python
- Ec2 instance store

## **ELB and route 53 and Acn**

- Introduction to Amazon ELB
- AWS Application load balancer
- AWS sticky session
- Amazon route53 with ALB
- AWS ssl certificate with ALB
- AWS network load balancer

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## Deploy Flask to Ec2 with application load

- Select introduction
- Create Flask project
- Deploy project to Github
- Create Ubuntu Ec2 instance
- Deploy Flask to ec2 instance
- Add custom Domain with Route53
- Creating Application Load balancer
- ACM

## AWS Lambda function

- Section introduction
- Introduction to Lambda function
- Listing s3 Bucket with Lambda function
- Upload Image to s3 Bucket with Lambda function
- Creating Dynamo db tables with Lambda function
- Inserting Item to Dynamo db with Lambda function
- Get Items from Dynamo DB tables with Lambda function
- Get item conditionally from Dynamodb with lambda function
- Update Dynamo DB item with lambda with lambda
- Delete Dynamo item with lambda function
- Creating Lambda function with python and boto3
- Invoking Lambda function with python and boto3
- Delete Lambda function with python and boto 3

## AWS cloud formation

- Introduction to Cloud formation
- Creating Dynamo db table with cloudformation

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- Creating stack with python and boto3
  - Describe stack with python and boto3
  - Get template info with python and boto3
  - Delete stack with python and boto3

## **SES**

- AWS ses introduction and pricing
- Creating identity in SES console
- Sending Email from SES to gmail
- Verify custom domain Email in SES
- Verify identity or email with python
- Listing identity or Email Address with python and boto3
- Create custom template for Email with python
- Get template information with python and boto3
- Send Email with python and boto3
- Send plain text Email with python and boto3
- Send HTML to Email with python and boto3
- Send attachment with Email in python and boto3

## **AWS Elastic Bean Stalk with Django Deployment**

- Section Introduction
- Introduction to Elastic bean stalk
- Configuring RDS Mysql Database with Django
- Creating Mysql RDS instance
- Deploy Django in AWS elastic bean stalk
- Configuring Django static files with elastic bean stalk
- Creating Custom Model in Django
- Creating our Django model

## **Update on elastic bean stalk creation**



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- Update on elastic bean stalk creation

## **Django 4.0 With RDS,Elastic bean stalk , Beanstalk & route 53**

- Section introduction
- Creating Django 4.0 project
- Creating super user in Django 4,0
- Creating Django APP
- Creating view function
- Creating Django models
- Model registration in admin panel
- Django models
- Django templates
- Django template inheritance
- Adding Bootstrap and CSS style
- Creating Dynamic slug
- Retrieving all articles
- Adding Bootstrap navbar
- Getting the details of articles
- Register a user
- Styling Register page
- Creating login view
- Creating logout view
- Working on nav bar
- Working on Change password
- Adding Article
- Update and Delete button
- Update article

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- Delete article
  - Login Required decorator
  - Introduction to elastic bean stk
  - Creating RDS MsqI Instance
  - Migrating Django to elastic bean stalk
  - Register domain with Amazon route 53
  - Elastic bean stalk and static files
  - Addind custom aDomain For Django application
  - Requesting SSL certification
  - Adding SSL certificate
  - Adding SSL certificate to website

## **Amazon code pipeline with flask and elastic beanstalk**

- Section introduction
- Flask Introduction and installation
- Flask URL Route parameter
- Flask cookies
- Flask templates
- Flask Templates
- Flask templates inheritance
- Flask context variable
- Add Bootstrap
- Custom Error page
- URL\_ for helper function
- Flask Static files
- Flask WTF Forms
- Flask flash messages
- Flask sql alchemy
- Flask migrate
- Flask folder structure