DAWS-74S Contents

Session-10:

DATE: 14-AUG-2023

Topics discussed:
- We configured shipping, RabbitMQ, payment and dispatch services.
- We discussed the difference between synchronous and asynchronous communication.
- How does DNS work?
- How to buy a domain in Hostinger?
- How to transfer domain control to AWS.

Session-11:

DATE: 15-AUG-2023

Topics discussed:
- DNS records are created for the domain.
- Configured records instead of IP.
- Discussed Git.
- Discussed why we should use shell.
- Created Git repo.
- Centralised vs Distributed.
- Git commands add, commit and push.

Assignments:
- Centralised vs Distributed version control system
- Why do we have staging area or temp area in Git

Session-12:

DATE: 16-AUG-2023

Topics discussed:
- SSH connectivity to GitHub
- How to convert existing folder as git
- Git add, commit and push commands
- Shell scripting shebang
- Variables and different ways.

Assignments:
- Create SSH authentication to your repo

- Practice variables with multiple programs.

Session-13:

DATE: 17-AUG-2023

Topics discussed:
- Conditions
- Functions
- Redirections and Logs
- Exit status and special variables
- Loops

Assignments:
- Improvise 12-loops.sh using above concepts

Session-14:

DATE: 18-AUG-2023

Topics discussed:
- Improved 12-loops.sh
- Deleting old log files
- Schedule through crontab
- Sending gmail from linux server

Assignments:
- Write a script that reads a text file and generates a list of words along with their frequencies. Bonus points for sorting the list by frequency.
- Develop a script that takes a text file and replaces all occurrences of a specific word or phrase with another word or phrase.
- Write a script that checks whether a given word or phrase is a palindrome (reads the same forwards and backwards).
- Develop a script that reverses the order of characters in each line of a text file.

Session-15:

DATE: 21-AUG-2023

Topics discussed:
- Disk Usage Shell script
- Sending gmail from linux server
- SED editor

- Formatting Gmail
- Roboshop MongoDB configuration through shell

Assignments:

- Automate Gmail configuration in Linux server, prompt user for credentials.
- Practice sed editor.
- Monitor RAM usage through **free command** and send email if it is more than threshold.
- You can continue configuring roboshop components using shell script.

Session-16:

DATE: 23-AUG-2023

Topics discussed:
- Completed roboshop shellscript configuration
- Telnet command

Assignments:

- Improve cart.sh, check if user roboshop already exists or not and app directory exist or not.
-

Session-17:

DATE: 24-AUG-2023

Topics discussed:
- Aws command line script to create servers and route53 records
- Ansible introduction
- Push vs pull in configuration managements
- Advantages of ansible over shell scrit

Assignments:

- Read push vs pull
- Ansible advantages over Shell script

Session-18:

DATE: 28-AUG-2023

Topics discussed:
- Ansible introduction recap

- Push vs Pull
- Installed ansible
- Ansible inventory file
- Connecting Ansible server and nodes.
- Ansible adhoc commands
- XML vs JSON vs YAML
- Playbooks
- Variables

Assignments:

- Practise different YAML.
- What is ansible adhoc command
- What is push vs pull in ansible
- What are ansible advantages

Session-19:

DATE: 29-AUG-2023

Topics discussed:
- Variables from PLAY
- Variables from files
- Variables from prompt
- Variables from inventory
- Variables from command line
- Variables from tasks
- Variables precedence
- Conditions
- How to check user exists or not

Assignments:
- take username as variable, and then dynamically check user exists or not then create
- check if a directory exists or not, if it does not exist create it.

Session-20:

DATE: 30-AUG-2023

Topics discussed:
- Loops
- Advanced loop
- Installed MongoDB

- Installed Catalogue
- Installed Web

Assignments:
- Understand the difference between **Shell vs Command module in ansible.**

Session-21:

DATE: 31-AUG-2023

Topics discussed:
- Ansible Playbook for
  - Redis
  - User
  - Cart
  - MySQL
  - Shipping
  - Payment

Assignments:
- Try to create EC2 instances and update route53 records through Ansible playbook.
- NOTE: Ansible server should have the role.

Session-22:

DATE: 04-SEP-2023

Topics discussed:
- Ansible Roles
- Roboshop using Ansible Roles

Assignments:
- What is ansible role?
- What are handlers?

Session-23:

DATE: 05-SEP-2023

Topics discussed:
- Ansible configuration

- Multiple environments
- Tags
- Parellelism
- Heterogenous and gather facts
- Function/Fileters

Session-24:

DATE: 06-SEP-2023

Topics discussed:
- Intro to IaaC
- Terraform advantages
- ENV setup
- Terraform providers
- Creation of EC2 and SG
- Variables

Assignment:
- Understand Terraform advantages
- Variables and data types

Session-25:

DATE: 07-SEP-2023

Topics discussed:
- Maps in variables
- Count and Count index
- Conditions
- Functions
- Outputs
- Locals
- Data sources

Assignment:
- Write a data source to fetch devops-practice AMI

Session-26:

DATE: 08-SEP-2023

Topics discussed:
- For each
- Dynamic block
- State and Remote state and lock file

Session-27:

DATE: 11-SEP-2023

Topics discussed:
- tfvars
- Module development

Session-28:

DATE: 12-SEP-2023

Topics discussed:
- CIDR
- VPC
- Subnets
- Internet Gateway
- Route tables
- Security Groups
- EC2 instance

Assignments:
- **Private vs Public subnet**
- **High Availability in AWS**
- **NAT Gateway**

Session-29:

DATE: 12-SEP-2023

Topics discussed:

- VPC module development

Assignments:
- **Clone https://github.com/sivadevopsdaws74s/terraform-aws-vpc.git into your workspace and start using it.**
- **Create your VPC module and start using it.**

Session-30:

DATE: 14-SEP-2023

Topics discussed:
- VPC module development
- NAT Gateway
- Using module source from GitHub

Assignments:
- **Clone https://github.com/sivadevopsdaws74s/terraform-aws-vpc-advanced.git and write readme.MD to tell users about inputs and outputs**
- **Develop your own VPC module and push to internet, others test that module**

Session-31:

DATE: 19-SEP-2023

Topics discussed:
- SG module development
- Using EC2 and R53 records modules
- Configuring entire roboshop project

Assignment:
- Create a module for EC2 instance

Session-32:

DATE: 20-SEP-2023

Topics discussed:
- ELK installation
- Shipping logs from nginx to elastic search through filebeat
- Filebeat to logstash and elasticsearch
- Logstash filters

Session-33:

DATE: 21-SEP-2023

Topics discussed:
- ELK installation
- Filebeat to logstash and elasticsearch
- Logstash Grok filters
- Kibana graphs of latency, traffic, errors
- VPC Peering

Assignment:
- Create 2 VPC, IGW, Subnets
- Create private subnet in VPC-2
- Launch EC2 in private subnet of VPC-2
- Launch EC2 in public subnet of VPC-1
- Try to connect EC2 in VPC-2 from EC2 in VPC-1

Session-34:

DATE: 22-SEP-2023

Topics discussed:
- VPC Peering and routes through infra
- Storing parameters
- VPN
- MongoDB

Assignment:
- Your VPC module should be able to support peering on any condition
  - VPC in same account same region
  - VPC in same account different region
  - VPC in diff account same region
  - VPC in diff account diff region

Session-35:

DATE: 25-SEP-2023

Topics discussed:
- Launch template
- Auto scaling
- Target Group
- ALB
- Listeners
- Rules
- Security groups

Session-36:

DATE: 26-SEP-2023

Topics discussed:
Creation of below resources through terraform
- Launch template
- Auto scaling
- Target Group
- ALB
- Listeners
- Rules
- Security groups
- Catalogue component

Session-37:

DATE: 28-SEP-2023

Topics discussed:
Creation of below resources through terraform
- Customised module for roboshop components
- Security group corrections

Session-38:

DATE: 29-SEP-2023

Topics discussed:
Creation of below resources through terraform
- Redis
- User

Session-39:

DATE: 03-OCT-2023

Topics discussed:
Creation of below resources through terraform
- Cart
- MySQL
- Shipping
- RabbitMQ
- Payment
- CI Introduction

Session-40:

DATE: 04-OCT-2023

Topics discussed:
Creation of below resources through terraform
- Jenkins Installation
- Freestyle job
- Agent installation
- Running job on agent
- Pipeline job
- Post section
- Running Terraform roboshop VPC on Jenkins

Session-41:

DATE: 05-OCT-2023

Topics discussed:
Creation of below resources through terraform
- Pipeline Syntax
- Sonar Server Installation

- Sonar Scanner
- Quality gates

Session-42:

DATE: 06-OCT-2023

Topics discussed:
Creation of below resources through terraform
- Nexus Server installation
- Nexus artifact uploader
- Provisioners

Session-43:

DATE: 09-OCT-2023

Topics discussed:
- **Git**
- **PR**
- **Merge vs rebase**
- **Branching strategy**
- **Merge conflicts**

Session-44:

DATE: 10-OCT-2023

Topics discussed:
- **Roboshop DEV Infra**
- **VPN Installation**
- **Overall process**

Session-45:

DATE: 11-OCT-2023

Topics discussed:
- **Upstream and Downstream jobs**

- **Reading version in Jenkinsfile**

Session-46:

DATE: 12-OCT-2023

Topics discussed:
- **Jenkins, Terraform and Ansible integration**
- **Installing playbook in EC2 through terraform remote provisioner**
- **Taking AMI and deleting instance through terraform**

Session-47:

DATE: 19-OCT-2023

Topics discussed:
- **CD process**
- **Running CICD from Jenkins**

Session-48:

DATE: 19-OCT-2023

Topics discussed:
- **Jenkins shared libraries**
- **Creation of PROD**
- **Intro to full DEV and PROD deployments**

Session-49:

DATE: 25-OCT-2023

Topics discussed:
- **IAM Roles**
- **Attachi catalogue role to catalogue instance**
- **Ansible to lookup SSM parameter store**

Session-50:

DATE: 26-OCT-2023

Topics discussed:
- **CICD full process from DEV to PROD**

Session-51:

DATE: 27-OCT-2023

Topics discussed:
- **Docker installation**
- **Docker commands**
- **Dockerfile instructions. FROM, RUN, CMD**
- **RUN vs CMD**

Session-52:

DATE: 30-OCT-2023

Topics discussed:
- **LABEL**
- **ENV**
- **ADD**
- **COPY**
- **ADD VS COPY**
- **ENTRYPOINT**
- **CMD vs ENTRYPOINT**

Assignment:

Prepare a document on Dockerfile instructions and popular interview questions
- **RUN vs CMD**
- **ADD vs COPY**
- **ARG vs ENV**
- **CMD vs ENTRYPOINT**

Session-53:

DATE: 31-OCT-2023

Topics discussed:

- **ONBUILD**
- **USER**
- **WORKDIR**
- **ARG**
- **ARG vs ENV**
- **Mongodb component**
- **Catalogue component**
- **Web component**
- **Bridge networking**

Session-54

DATE: 01-NOV-2023

Topics discussed:
- **Docker compose**
- **User**
- **Redis**
- **Cart**
- **RabbitMQ**
- **Shipping**
- **Payment**
- **MySQL**

Session-55

DATE: 02-NOV-2023

Topics discussed:
- **Docker Volumes**
- **Named vs unnamed volumes**
- **Multi stage builds**
- **Reducing image size**
- **Running container as non root user**

Session-56

DATE: 03-NOV-2023

Topics discussed:

- **Docker layers**
- **Docker Architecture**
- **Minikube installation**
- **Kubernetes namespace**

Session-57

DATE: 06-NOV-2023

Topics discussed:
- **Pods**
- **Multi containers**
- **Labels**
- **Annotations**
- **Resources**
- **Environment**
- **Configmaps**
- **secrets**
- **Services**
- **Cluster IP**

Session-58

DATE: 07-NOV-2023

Topics discussed:
- **NodePort**
- **Load Balancer**
- **Replica Set**
- **Deployment**
- **MongoDB**
- **Catalogue**
- **Web**
- **Mounting nginx.conf as volune**