Industry 4.0 : Implementing solutions by programming with Python to analyze data through Spark and Databricks over AWS Cloud by Dockering the environment

In the past decade we have offered a number of technologies with huge buckets like Bigdata , cloud , devops , CI CD and many more .

Linux Never Before: (25 Hours)

Introduction to linux (2.5 Hours) :

- Getting started with Linux kernel
- Deep dive with linux flavours
- Installing Centos / fedora
- Basic command
- Directory structure

Exercise : 2

Bash shell deep dive (2.5 hours) :

- Shell deep dive understanding
- Writing shell scripting
- Shell features and env variables

Exercise : 1

IO redirection : (5 hours)

- IO redirection understanding
- File and socket direction
- Pipeline concept deepdive
- Grep command use cases
- Tail and head need
- Tr command for translation

Exercise : 2

User management : (2.5 hours)

- User management concepts and understanding
- Creating users and groups
- Assigning password and groups password
- Adding member into groups

- Concept of sudoers (only concept)

Linux permissions : (2.5 hours)
- permission details
- Explaining inode table
- User , group and others permission
- Importance of file and directory permission with r , w , x
- Introduction to decimal permission
- Demos of acl (give them task)
- Setting permission to files and directories

Partition management (2.5 hours)

- Partition concept and partition table
- Creating , formation and mounting partition
- LVM concept and dynamic partitions
- /etc/fstab importance

Software management : (1 hours)
- Software installer understanding yum & dnf / apt
- Details of yum and dnf
- Ubuntu based software installer apt
- Manual software installation with rpm and dpkg

Server management : (5 hours)
- Server management for deploying apps
- Deployment and use cases of   ssh
- File transfer server configure and uses
- Web server understanding and setup with httpd
- Data sharing server setup with NFS

Project 1 : **creating a distributed environment for your group / college / university where users can login in remote systems using ssh and store data in NFS remote locations additionally can download and upload data using FTP .**

Project 2: Python and linux based web applications hosting over voice controller

Database SQL : (2 hours)

- Mariadb database vs mysql understanding
- Installation and configuration
- Sql language understanding and query
- Creating database and tables
- Backup and restore
- Setting permissions

Project 1: Python flask of django with mariadb database and handling a login page maintain API for different services and projects of linux servers.

Python 3: (15 Hours)

- Python getting started
- Variables and data types
- Loops and conditional statements
- Functions & classes
- Python with database connection
- Python cgi for web applications
- Python web apps using either / flask / django

Bigdata & Data analytics: (20 Hours)

- Cloudera & hortonworks platform
- HDFS & YARN
- Apache spark
- Databricks
- Tableau

Cloud integration: (10 Hours)

- AWS cloud services
- IAAS ec2, ebs
- ELB & EBS
- Azure devops
- Azure vm
- Azure networking

Devops:

Containerization approach : (30 Hours)

- What are containers
- Understanding windows and linux containers
- Installing docker|podman for container platform
- Creating and managing containers using docker cli|webUI|API
- Docker deep dive
- Docker desktop and other approach
- Docker based container management
- Docker in cloud environment
- Podman same content

Docker compose :

- Understanding and using docker compose
- Integration with github
- Docker compose with database and multiple application
- Compose tips for students and professional
- Infrastructure as code
- Json and yaml for IAC

Container orchestration : Kubernetes (20)

- Understanding production grade container orchestration
- Minikube based deployment cluster
- Understanding pod and deploying of application
- Scaling application using k8s
- Overview of k3s and k8s
- Wordpress deployment using k8s
- Deployment using acr & docker hub

Azure Devops :

- Integration azure devops with technology
- Azure boards
- Azure build and pipeline

Project :

Profile-

- **Hadoop / Big Data Developer.**
- **Hadoop Administrator**
- **Data Engineer**
- **Big Data Architect**
- **Big Data Consultant**
- **Cloud Consultant**
- **Cloud Infrastructure Engineer**
- **Cloud Architect**
- **DevOps Cloud Engineer**
- **Data Science Engineer**
- **Application Developer**
- **Kubernetes Engineer**
- **Python Developer**
- **Linux Engineering Admin**
- **Linux Engineer**
- **DevOps Engineer**
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Industry 4.0: Disrupting Digital Transformation driven by Intelligent Decisions Implementing solutions by programming with Python to analyze data through Spark and Databricks over AWS Cloud by Dockerizing the environment and creating a CI/CD Pipeline to Automate the entire process.