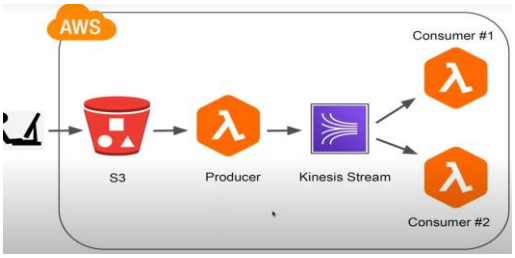
CLOUD COMPUTING ESSENTIALS LAB EXERCISE

LAB#	SERVICE	SUBTOPICS	CATEGORY
1	**EC2**	• INSTANCE [LINUX / WINDOWS] • INSTANCE TYPE • AMI • KEYPAIR • ELASTIC IP • VOLUME • SECURITY GROUP • TARGET GROUP • AUTOSCALING • ELASTIC LOAD BALANCING • Connecting using third party tool **Putty** • Custom AMI • Installing Apache/Nginx using User Data	Compute
2	**S3**	• Bucket • Operations on Bucket • Bucket Policy • Versioning • Static Web Site Hosting • Life Cycle Configuration and Management	Storage
3	**VPC**	• VPC • Internet Gateway • Subnet • Route Table • Routes • Custom VPC • Custom Subnet [Public and Private]	Networking & Content Delivery
4	**IAM**	• Identity Access Management Service • Users • Group • Roles • Policies	Security, Identity and Compliance
5	**DynamoDB**	• NoSQL Database Service • CRUD Operations • **Configuring AWS CLI** using Security Credentials • Accessing the service using **AWS CLI**	Databases
6	**RDS**	• Relational Database Service • MariaDB and MySQL • Connecting RDS Instance from Local Machine (Windows) using **MySQL workbench** • Performing CRUD operations • Connecting RDS Instance from EC2 (Linux) using **mariadb105-server** • Performing CRUD operations	Databases
7	**Elastic BeanStalk**	• Deploying WEB Application Elastic Beanstalk [Nodejs Env]	Compute
8	**Cloudwatch**	• Amazon resource monitoring service • Creating alarms on resource metrics • Custom Dashboards	Management And Governance
9	**SNS**	• Simple Notification Service • Topics • Subscribers	Application Integration

10.	**Kinesis**	• Real Time Data Capturing: Kinesis Streams • Partition Key • Shards • Sequence Number • Use Case1: 	Application Integration
11	**Lambda**	• Serverless Processing • Nodejs Code • **AWS SDK in code**	Compute
12	**Docker**	• Desktop Docker • Containerization • Images • Volumes • Pulling and Pushing Images on Docker HUB • Container Lifecycle : Create Start Stop Delete • Port Mapping • Logging • Running application terminal	Containers
13	**Kubernetes**	• Container Management and Orchestration • Minikube Installation and KubeCtl • Master Node and Worker Node • PODS: Deployment, Service, ConfigMap, Secret, Ingress	Container Management & Orchestration
14	**Cloudformation**	• Infrastructure as Code • EC2 Instance • ElasticIP • Security Group • KeyPair • S3 Bucket • Versioning • Bucket Policy • VPC • Subnet • RouteTable • Route	Management And Governance
15	**Amazon Lex**	• Conversational Chat bots [AI]	ML and AI
16	**KMS**	• Key management Service • Amazon owned keys • Amazon managed keys • Customer Managed Keys (CMK) • Symmetric & Asymmetric Keys • Client-Side-Encryption Vs Server-Side-Encryption • Creating CMK with Key Material source KMS • Creating CMK with Key Material source External openssl	Security, Identity and Compliance
17	**Cloudfront**	• Content Delivery Network	Network and Content Distribution

		• Concept of Edge Locations, Regional Edge Location, PoP's • Origin Server, Cache Policy • **Use Case1:** Making EC2 with Apache Installed as origin server and creating CloudFront Distribution for it to render Apache index page	