**day04\_107856406\_dsdipt\_sudipto\_22may2025**

**Employee Code:** 107856406

**Login ID:** dsdipt

**Email :** dsdipt@amazon.com

**Name:** Sudipto Das

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### ***Task 1: What do you know about the cloud?***

Cloud computing refers to the **delivery of computing services**—such as storage, servers, databases, networking, software, and more—**over the internet (“the cloud”)**. Instead of owning and maintaining physical hardware or software, users can access and use these services on-demand from a cloud provider.

**Main Types of Cloud Services:**

1. **IaaS (Infrastructure as a Service)** – e.g., Amazon EC2, Google Compute Engine
2. **PaaS (Platform as a Service)** – e.g., Heroku, Google App Engine
3. **SaaS (Software as a Service)** – e.g., Gmail, Google Docs, Microsoft 365

**Popular Cloud Providers:**

* Amazon Web Services (AWS)
* Microsoft Azure
* Google Cloud Platform (GCP)
* IBM Cloud

**Key Benefits of Cloud Computing:**

* **Cost Savings:** No upfront capital expenditure for hardware, pay-as-you-go pricing.
* **Scalability & Elasticity:** Easily scale resources up or down based on demand.
* **Agility:** Faster deployment of applications and resources.
* **Reliability:** High availability and disaster recovery built-in across regions/zones.
* **Global Reach:** Deploy applications globally quickly.
* **Security:** Cloud providers invest heavily in security measures.
* **Focus on Core Business:** Offload IT infrastructure management to experts.

### ***Task 2: Install JDK, Tomcat & Jenkins (with Maven Plugin).***

**1. Install JDK (Java Development Kit)**

**Command:**  
sudo apt update

sudo apt install openjdk-17-jdk

* **Verify:** java -version

**2. Install Apache Tomcat**

**Download**  
cd ~

wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.89/bin/apache-tomcat-9.0.89.tar.gz # (Use latest stable Tomcat 9 URL)

**Extract:**  
tar -xzvf apache-tomcat-9.0.89.tar.gz

mv apache-tomcat-9.0.89 tomcat # (Optional: rename folder)

**Start:**  
~/tomcat/bin/startup.sh

* **Verify:** Open browser to http://localhost:8080

**3. Install Jenkins**

**Install Jenkins:**  
sudo apt update

sudo apt install jenkins

**Start & Enable:**  
sudo systemctl start jenkins

sudo systemctl enable jenkins

**Get Initial Password:**  
sudo cat /var/lib/jenkins/secrets/initialAdminPassword

* **Access UI:** Open browser to http://localhost:8081 (Use password from above to unlock).
* **Install Maven Plugin (via Jenkins UI):**
  + After setup, go to Manage Jenkins -> Manage Plugins.
  + Click Available tab, search for Maven Integration, and install it.