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EXPERIMENT NO . 14

▪ Title:
Understanding Basic Concepts of Microsoft Azure

▪ Objective:
- To understand the basic structure and services provided by Microsoft Azure.
- To learn how to create and manage Azure resources using the Azure Portal.
- To explore core Azure concepts like Virtual Machines, Storage, and Networking.
- To understand Azure's subscription, resource group, and deployment models.

▪ Resources used:
PC / Laptop with Internet Connection, Microsoft Azure Account (Free Tier), Web Browser (Edge/Chrome), Azure Portal (https://portal.azure.com)

▪ Theory:

Microsoft Azure is a **cloud computing platform** provided by Microsoft that offers a wide range of services such as computing, storage, networking, databases, AI, and analytics.
It provides **Infrastructure as a Service (IaaS)**, **Platform as a Service (PaaS)**, and **Software as a Service (SaaS)** models, enabling users to deploy and manage applications without physical hardware.

Key Concepts:

1. **Azure Subscription:**
   It defines a logical container used to provision resources in Azure. Each subscription has limits, billing, and permissions.

2. **Resource Group:**
   A container that holds related resources like virtual machines, storage accounts, and databases for easier management.

3. **Azure Virtual Machine (VM):**
   A virtualized computer instance in the cloud that allows users to deploy operating systems and applications remotely.
4. **Azure Storage:**
   Provides scalable and secure storage solutions including Blob, File, Queue, and Table storage.
5. **Azure Networking:**
   Allows secure connectivity between Azure resources and on-premises networks using Virtual Networks (VNet), VPN, and Load Balancers.
6. **Azure Portal:**
   A web-based interface used to manage, deploy, and monitor all Azure services interactively.
7. **Deployment Models:**
   - **Public Cloud** – Shared infrastructure managed by Microsoft.
   - **Private Cloud** – Dedicated environment for a single organization.
   - **Hybrid Cloud** – Combines both public and private clouds for flexibility.

▪ **Procedure / Steps:**

1. Sign in to **Azure Portal** using your Microsoft account.
2. Navigate to **"Create a resource"** and choose **Virtual Machine**.
3. Select a **resource group** or create a new one.
4. Choose the **region**, **image (OS)**, and **VM size**.
5. Configure **networking options** (VNet, subnet, and public IP).
6. Review and click **Create** to deploy the VM.
7. Similarly, explore other Azure services such as **Storage Accounts** and **App Services**.
8. Observe the resource management under **Resource Groups**.
9. Finally, delete the created resources to avoid billing charges.

▪ **Output:**

Successfully created and managed Azure resources (Virtual Machine, Resource Group, and Storage Account) using the Azure Portal.
Observed Azure's interface and learned how resources are linked under subscriptions and groups.

▪ **Conclusion:**

• Understood the **basic structure and working** of Microsoft Azure.
• Learned to **create and manage resources** like Virtual Machines and Storage Accounts.
• Gained hands-on experience with **Azure Portal** and its user interface.
• Understood fundamental concepts of **cloud services, deployment models, and scalability** in Azure.