MODULE 1: DESCRIBE CLOUD CONCEPTS

SECTION 1: DESCRIBE CLOUD COMPUTING

I. CLOUD COMPUTING

Cloud computing is the **delivery of computing services** over the internet.

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flowchart LR
A[Computing Services] --> B[Compute services]
A --> C[Storage services]
A --> D[Networking services]
```

II. SHARED RESPONSIBILITY MODEL

1. When using a cloud provider, you'll always be responsible for:

- The information and data stored in the cloud
- Devices that are allowed to connect to your cloud (cell phones, computers, and so on)
- The accounts and identities of the people, services, and devices within your organization

2. The cloud provider is always responsible for:

- The physical datacenter
- The physical network
- The physical hosts

3. Your service model will determine responsibility for things like:

- Operating systems
- Network controls
- Applications
- Identity and infrastructure

III. CLOUD MODELS

BASED ON HOSTING:

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mindmap
    root((cloud models))
        (Private Cloud)
            (Definition)
                [IT infrastructure used by a single organization for greater
control and customization]
            (Benefits)
                [Enhanced security, compliance, tailored resources, and
dedicated management]
            (Drawbacks)
                [Higher costs, limited scalability, and reduced agility]
            (Hosting)
                [On-site or off-site by a dedicated datacenter]

        (Public Cloud)
            (Definition)
                [Delivers IT services over the internet, accessible to multiple
organizations]
            (Benefits)
                [Cost-effective, scalable, flexible infrastructure with shared
resources]
            (Drawbacks)
                [Security concerns, compliance challenges, and limited
customization]
            (Hosting)
                [Third-party providers’ datacenters globally]

        (Hybrid Cloud)
            (Definition)
                [Combines private and public clouds for seamless integration]
            (Benefits)
                [Flexibility, scalability, data control]
            (Drawbacks)
                [Complexity, integration challenges, security concerns]
            (Hosting)
                [Ideal for legacy systems alongside modern cloud applications
or data sovereignty requirements]
```

BASED ON PRICING:

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mindmap
    root((Cloud Pricing Models))
        (On-Demand)
            [Pay for resources as you use them, without any upfront
commitments.]
            [Ideal for unpredictable workloads or short-term needs.]
            [Flexibility to scale resources up or down based on demand.]

        (Spot Pricing)
            [Bid on unused cloud resources at a lower price.]
            [Suitable for non-critical workloads or batch processing.]
            [Availability depends on resource availability and demand.]

        (Reserved Instances)
            [Commit to using specific resources for a fixed term of 1-3 years.]
            [Offers cost savings compared to on-demand pricing.]
            [Best for stable workloads with predictable usage patterns.]
        (Volume Discounts or Tier-Based Pricing)
            [Discounts based on usage volume or commitment levels.]
            [The more you use, the lower the per-unit cost.]
            [Encourages long-term usage and cost optimization.]
```

SECTION 2: AZURE SERVICES AND ACCOUNTS

I. ARCHITECTURE OF A AZURE ACCOUNT

image1 (./image.png)