**Azure Class 2 Notes: Resource Groups, Azure Regions, and VM Introduction**

**Understanding Resource Groups**

In Azure, a resource group is a container that holds related resources for a solution. Think of it like a folder in a file system, used to organize and manage resources. For AZ-900, it's essential to know that resource groups help in managing and monitoring resources collectively, applying access controls, and simplifying billing.

**Azure Regions Explained**

Azure Regions are geographical areas that represent the locations of Azure data centers. Knowing about regions is important because it affects several factors:

* **Latency**: Closer regions mean faster data access for users.
* **Compliance**: Meeting legal or policy requirements by storing data in a specific region.
* **Disaster Recovery**: Spreading resources across regions can prevent complete data loss.

For AZ-900, understand that selecting the right region can impact the performance, costs, and legality of your Azure solutions.

**Virtual Machines (VMs) Introduction**

Azure VMs are scalable, on-demand computing resources. They are a key part of Azure's Infrastructure as a Service (IaaS) offerings, allowing users to run applications and services on the cloud. For the AZ-900 exam, grasp the basics of VMs, their uses, and how they fit into the Azure ecosystem.

**Cloud File Share Application Use Case**

Problem Statement

We need an easy-to-use cloud application where users can store, access, and manage their files online from anywhere.

Simplified User Stories

1. **Uploading and Downloading Files**
   * Users should be able to put their files onto the cloud and get them back whenever they need.
2. **Viewing File Details**
   * When looking at files, users should see information like the file size and when it was uploaded.
3. **Browsing Files**
   * Users should easily see all the files they have stored and be able to look through them.
4. **Secure File Access**
   * Only the person who uploaded the file or those they permit should be able to see or download it.
5. **Easy File Sharing**
   * Users should have the option to share their files with others through a simple link.
6. **Automatic File Backup**
   * The system should automatically create backups of files to prevent loss.

Using Azure Services

* **Azure Blob Storage**: Where all the user files will be stored.
* **Azure Functions**: Will handle the uploading and downloading of files, making things run smoothly without needing a server.
* **Azure SQL Database/Cosmos DB**: Keeps track of file details like size, type, and upload date.
* **Azure Active Directory (Azure AD)**: Makes sure that only authorized users can access files.
* **Azure CDN (Content Delivery Network)**: Helps users access files quickly, no matter where they are.

**AZ-900 Relevance**

* The use case demonstrates real-world application of Azure services, aligning with the AZ-900 syllabus.
* Understanding how different Azure services like VMs, storage, and databases work together is crucial for the exam.
* Practical knowledge of implementing a solution in Azure helps in grasping fundamental cloud concepts.