Cloud Computing Concepts

These terms are foundational in cloud infrastructure, often used when setting up resources on platforms like AWS, Azure, or Google Cloud.

- Region: A physical, geographic location that hosts multiple data centers. Cloud providers strategically place regions around the world to ensure low latency and to meet data residency requirements. Example: US East (N. Virginia), Europe (Frankfurt).
- Availability Zone (AZ): One or more discrete data centers within a Region, isolated from failures in other AZs. They are physically separated but connected by high-speed, low-latency networks. Using multiple AZs provides high availability and fault tolerance. * Local Zone: A type of infrastructure deployment that places select cloud services closer to a specific geographical area than a standard Region. They are an extension of a Region, primarily used to serve applications that require very low latency (e.g., real-time gaming, media processing) to end-users in that specific local area.
- VPC (Virtual Private Cloud): A private, isolated network section within the cloud that is dedicated to your account. It gives you complete control over your virtual networking environment, including IP address ranges, subnets, route tables, and network gateways.
- Subnet: A range of IP addresses within a VPC. Subnets allow you to partition your VPC network for security and organizational purposes. They can be public (accessible from the internet) or private (internal use only).

GitHub Assignment Steps

GitHub is a platform used for version control and collaborative software development. Here's how to complete the assignment steps:

1. Explore GitHub

- Go to the GitHub website and familiarize yourself with the interface. Look at repositories, profiles, and the basic concepts like Commits, Branches, and Pull Requests.

2. Create an Account on GitHub

- Navigate to the GitHub sign-up page.
- Provide a valid email address, create a strong password, and choose a username.
- Follow the verification steps (often an email confirmation).

3. Create a GitHub Repository

A repository (or "repo") is like a folder for your project.

- Once logged in, click the + icon in the top right corner and select New repository.

- Repository name: Choose a descriptive name (e.g., `CloudComputing-Assignment-1`).
- Description (Optional): Briefly describe the project.
- Visibility: Choose Public or Private as required by your instructor.
- Check the box to Initialize this repository with a README (Recommended).
- Click Create repository.

4. Push your Assignment on the Account (Upload/Commit)

This is how you add your local assignment files to the online repository.

- Open your newly created repository on GitHub.
- Click the Add file button, then select Upload files.
- Drag and drop your assignment files (e.g., a document, code files) onto the page, or use the "choose your files" link.
- At the bottom, add a Commit message (e.g., "Initial submission of Cloud Concepts write-up").
- Click Commit changes.

5. Clone the Assignment for Verification

"Cloning" means creating a local copy of the remote repository on your personal computer. Your instructor may ask you to do this to demonstrate you can use the Git command line tool.

- Install Git: If you don't have it, download and install Git for your operating system.
- Get the Clone URL: On your GitHub repository page, click the green <> Code button and copy the HTTPS URL.
- Open a terminal or command prompt on your computer.
- Navigate to the folder where you want to store the project (e.g., `cd Documents/Projects`).
- Run the `git clone` command, pasting the URL you copied:

Bash

```
git clone [THE URL YOU COPIED]
```

- This will create a new folder with your repository's name, containing all the files you pushed in the previous step.

Would you like me to elaborate on one of the Cloud Computing Concepts or guide you through the GitHub steps with more detail?

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