FAST National University of Computer and Emerging Sciences

Department of Computer Science, Peshawar Campus

Assignments

(Fall 2023)

Course Name	Cloud Computing	**Instructor**	Usama Musharaf

Assignment # 1:

Deploy a three-tier web application on AWS that involves setting up different layers for your application: the presentation tier, application tier, and data tier as shown in the given diagram below. Create VPC and subnets as given in the diagram. Use load balancer for handling traffic. Further details are as follows:

1. **Set Up the Presentation Tier (Interface):**
   - Launch an EC2 instance to serve as a web server.
   - Configure security groups to allow HTTP/HTTPS traffic.
   - Install a web server (e.g., Apache, Nginx).
   - Deploy a sample web application (e.g., HTML, JavaScript, CSS or PHP) on the EC2 instance.

2. Set Up the Application Tier: (Business Logic)

   - Create an EC2 instance and deploy your business logic code here.
   - Install necessary software (e.g., Node.js, Python, Java, PHP etc).
   - Configure security groups.

3. Set Up the Data Tier:

   - Choose an appropriate database service (e.g., Amazon RDS, Amazon DynamoDB, Amazon Aurora).
   - Create a database instance.
   - Define database schema and tables.
   - Configure security groups, subnet groups.
   - Test database connectivity from the application tier.

Region

VPC

Availability Zone-1

Application Load Balancer

Availability Zone-2

Public Subnet

Presentation Layer

Public Subnet

Presentation Layer

Private Subnet

App Layer	EC2
	PHP + Apache

Private Subnet

App Layer	EC2
	PHP + Apache

Private Subnet

DB Layer	RDS
	MYSQL

Private Subnet

DB Layer	RDS
	MYSQL

Multi-A-Z