**College of Informatics and Computing Sciences**

## Case Study 2 for Migrating to a Cloud Database

- Create an infographic-based project, explaining the significance of migrating from a traditional database to a cloud database for a fictitious organization you've designed, provide step-by-step instructions with figures for the migration process, and submit both the infographic and your SQL migration code in PDF format
  *PDF format, landscape legal size*
  *Submit on Google Classroom*
  *Due Date: November 30th, 11:59 PM*

- **Points:**
  *Assignment#1: 10*
  *Case Study#2: 25*
  *Assignment#2: 10*

| *(Guide)* | |
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| *(Page 1)*<br>**Migrating to a Cloud Database (10 points)**<br>• Create a fictitious organization with a brief description.<br>• Explain why this organization's traditional database is in need of migrating.<br>• Consider factors such as growth, data volume, and accessibility.<br>• Describe the specific challenges the organization is facing. | |
| *(Column 1)*<br>**Title** (*Pseudo Organization and Rationale for Cloud Database Migration)*<br>**Background (5 points)** | *(Column 2)*<br>**Why Migrate to the Cloud? (5 points)** |
| • Traditional vs. Cloud Databases<br>• Challenges of Traditional Databases<br>• Advantages of Cloud Databases<br>• Real-world Success Stories<br>• The Relevance of Cloud Computing Today | • Scalability and Elasticity<br>• Cost Efficiency<br>• High Availability<br>• Data Security and Compliance<br>• Global Accessibility |

| *(Page 2)* **Step-by-Step Instructions (25 points)** | |
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| *(Column 1)* **Figure 1: Setting Up the Cloud Environment (10 points)** | *(Column 2)* **Figure 3: Data Migration (AWS/ Azure) (10 points)** |
| • AWS/ Azure: Create an AWS/Azure account.<br>• [AWS/ Azure Logo](insert Azure logo here)<br>• Launch AWS/ Azure SQL Database.<br>• [AWS/ Azure SQL Database Screenshot](insert screenshot here) | • Utilize AWS/Azure Database Migration Service.<br>• [AWS/Azure Database Migration Service Screenshot](insert screenshot here)<br>• Configure migration project and endpoints.<br>• [Configuration Screenshots](insert screenshots here)<br>• Start the migration and monitor progress.<br>• [Migration Progress Screenshot](insert screenshot here) |
| Figure 2: **Database Backup and Export (5 points)** | |
| • Export data from your traditional database (e.g., MySQL).<br>• [Exporting Data Screenshot](insert screenshot here)<br>• Create a backup of the database.<br>• [Creating Backup Screenshot](insert screenshot here) | |

| *(Page 3)* **Impact of Migration (10 points)** | |
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| *(Column 1)* **Find at least three key reasons why migrating to a cloud database is impactful and advantageous. (4 points)** | *(Column 2)* **SQL migration code (6 points)** |
| • Provide a brief explanation for each of the three points you discover. | • Data Definition Language (Structure)<br>  ○ minimum of 6 tables<br>• Data Manipulation Language (Data Insertion)<br>  ○ minimum of 5 rows each table |

| | |
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| • Use your own words and understanding to describe the significance of each advantage. | *Submitted by:*<br>*Section:*<br>*Date:* |

Sample Output:

**Migrating to a Cloud Database - ABC Logistics Inc.**

**Background of the Study**

In the context of our fictitious organization, ABC Logistics Inc., which specializes in global supply chain management, it has become increasingly evident that our traditional relational database management system (RDBMS) is no longer adequate to meet the growing demands and challenges of our operations. ABC Logistics has expanded its services to manage an extensive network of clients, suppliers, and distribution centers across the globe, resulting in a substantial increase in data volume and complexity.

The traditional RDBMS, which has served us well for many years, now presents several critical issues that hinder our ability to maintain a competitive edge in the industry:

1. Scalability Constraints: As our database size continues to grow, we have encountered performance bottlenecks, making it difficult to handle the increasing data load efficiently.
2. Data Accessibility: With a geographically dispersed workforce and clientele, there is a pressing need for seamless and secure global accessibility to our data, which our traditional database struggles to provide.
3. Cost and Resource Inefficiency: The maintenance and operational costs associated with our on-premises database infrastructure have soared, demanding significant financial and IT resources.
4. Data Security and Compliance: Ensuring data security and compliance with varying global regulations has become a cumbersome task. It's essential to protect sensitive information, such as customer data and supplier contracts.
5. Downtime and High Availability: We must minimize database downtime to maintain a high level of service availability. Traditional databases are ill-equipped to handle this requirement effectively.

**[Step by Step Instructions to Migrate RDBMS to CLOUDDB]**

Figures and Texts

**Conclusion:**

In conclusion, the migration of ABC Logistics Inc.'s database from a traditional system to a cloud-based solution is a pivotal decision that addresses the pressing challenges of scalability, data accessibility, cost efficiency, security, and high availability. This activity has equipped students with a comprehensive understanding of the essential steps and considerations involved in this transition. By providing step-by-step instructions with figures for Azure and AWS, it has imparted practical skills that are highly relevant in the modern digital landscape. Beyond our fictitious organization, this activity underscores the universal importance of cloud database migration as a strategic move towards operational efficiency and competitiveness. It serves as a stepping stone for students to navigate the evolving world of cloud technology and data management, making them well-prepared for real-world IT scenarios.