

## **Department of IT & CS**

**Course Instructor:** Zubaria Noureen

**Assignment:** 04

**Section:** BS (SE) – F22

**Assigned Date:** 4<sup>th</sup> Decemeber, 2025

**Course:** COMP-473 Software Re-Engg.

**Semester:** Fall 2025

**Marks:** 10

**Due Date:** 11<sup>th</sup> December, 2025 (End of Day)

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### **Submission Guidelines**

- Pdf are to be uploaded on MS-Teams in relevant folder.
  - Make it presentable with proper cover page, page numbers and necessary details.
  - Mention in your report some of the challenges, errors and mistakes you encountered while attempting.
  - You have to include images and screenshots in your report wherever mentioned with question.
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**Good Luck!**

Modernizing legacy systems is critical for improving maintainability, scalability, performance, security, and reducing operational costs. In this assignment, you will analyze a legacy system scenario, identify modernization opportunities, propose a modernization strategy, and design supporting models/artifacts to justify your approach.

A retail company “**ShopEase**” has been operating for 15 years. Their core system—**ShopEase Inventory Management System (SIMS)**—was built using:

- **Visual Basic 6 (VB6)**
- **On-premises SQL Server 2005**
- **Crystal Reports 9**
- Runs only on **Windows XP-compatible machines**
- No API layer
- Manual backup processes
- Poor documentation and outdated data model
- Frequent downtime during sales season
- No mobile access, no real-time stock updates
- Rising maintenance cost and difficulty in hiring developers familiar with VB6

The management wants SIMS to modernize into a **cloud-based, scalable inventory system** with **real-time updates, REST APIs, and automated deployment** capabilities.

## Tasks:

### Task 1: Legacy System Assessment

Analyze SIMS and identify:

1. Technical limitations (language, platform, database, integrations, etc.)
2. Business limitations (productivity, performance, downtime, user experience)
3. Risks of keeping the legacy system unchanged

### Task 2: Modernization Strategy Proposal

Propose a complete modernization roadmap including:

1. **Modernization approach**

- Choose between: *Rehosting, Replatforming, Refactoring, Re-architecting, Rebuilding, Replacement*
- Justify your choice.

2. **Proposed target architecture**

- Technology stack (e.g., microservices, cloud provider, database choice)
- Data migration strategy
- API enablement
- Security enhancements



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