Assignment Cover Sheet

Qualification		Module Number and Title
HD in Computing and Software Engineering		CSE5013 Service Oriented Computing
Student Name & No.		**Assessor**
		Gihan Herath
Hand out date		**Submission Date**
		/
Assessment type Coursework	**Duration/Length of Assessment Type** Practical project/report	**Weighting of Assessment** **100%**

Learner declaration
I certify that the work submitted for this assignment is my own and research sources are fully acknowledged.

Marks Awarded			
First assessor			
IV marks			
Agreed grade			
Signature of the assessor		Date	

FEEDBACK FORM
INTERNATIONAL COLLEGE OF BUSINESS & TECHNOLOGY

Module: Service Oriented programming
Student ID:
Assignment: Writ1

Marks Allocated	**Task 1 20**	**Task 2 60**	**Task 3 10**	**Task 4 10**	**Total marks 100**
Marks Awarded					

Task	**Feedback**
1	
2	
3	
4	
General Comment	

Assessor Name	**Signature**	**Date**

Learning outcomes covered

- Understand Service oriented architecture and patterns.
- Design service application solution by applying SO concepts
- Develop service service-oriented application
- Critically evaluate the suitable delivery environment and deploy service application.

Scenario and the Task

TechFix is a local computer shop specializing in repairs, upgrades, and custom builds. TechFix relies on two main suppliers for hardware and components, but their current procurement process suffers from several inefficiencies.

Current Issues:

1. Manual Quotation Requests: Each time TechFix requires a quote, they need to manually contact each supplier via email or phone, detailing their specific needs. This process is time-consuming and prone to errors due to missing information or miscommunication.

2. Inconsistent Pricing: Pricing structures and discounts vary between suppliers and are often not readily available, making comparison and price negotiation difficult. This can lead to TechFix missing out on better deals or overpaying for components.

3. Limited Inventory Visibility: TechFix lacks real-time visibility into each supplier's inventory levels, leading to delays when ordering out-of-stock items and requiring frequent follow-ups on order status.

4. Inefficient Order Placement: Orders are manually placed through individual supplier websites or emails, making the process prone to errors and lacking tracking capabilities. This hinders order accuracy and slows down fulfillment times.

5. Data Silos: All procurement data is stored in separate email threads and spreadsheets, making it difficult to analyze past purchases, identify trends, and make informed decisions about future orders.

To address these challenges, TechFix can implement a custom SOA application designed for their specific needs. This application would integrate with both suppliers' systems and offer several key features:

- Centralized quoting platform: Suppliers upload their latest pricing and inventory data, allowing TechFix to compare pricing and request quotes in a single platform.
- Real-time inventory visibility: TechFix should be able to view inventory levels of the suppliers to ensure order accuracy and avoid delays.
- Automated order placement: Orders are placed directly through the platform, reducing manual processes and errors.

Based on the above mention requirement you need to develop a SOC-based solution. Need to implement needed requirements as services and also need to build client applications and consume via API.

Tasks

1. Explain how Monolithic architecture and Service-oriented architecture models can be used for this case study. Compare and contrast both architectures and justify the best architecture based on maintainability and scalability. (20 marks)
2. Design and develop a suitable application based on SOC. Need to implement the services and also must create a client application to consume the services. Should be able to demonstrate and provide all source codes with suitable design diagrams. Need to use proper coding standards and must focus on the reusability and maintainability of the application. (60 marks)
3. Properly test the developed application and should be able to demonstrate the debugging process and demonstrate testing results. (10 marks)
4. Explain deployment techniques that are suitable for the developed application (Server, Docker, Kubernetes, etc....). (10 marks)

Submission Guidelines

- Submission format Report
- Paper Size: A4
- Words: 3000 words
- Printing Margins: LHS; RHS: 1 Inch
- Binding Margin: ½ Inch
- Header and Footer: 1 Inch
- Basic Font Size: 12
- Line Spacing: 1.5
- Font Style: Times New Roman
- Alignment Justified
- **Referencing should be done strictly using the Harvard system**

Source code, database backup, and installation packages should be submitted in a single zip file.

Assessment Criteria

Task 1 contains 20 marks

Criteria	**Marks** **Out of 20**	**Marks obtained by the student for the answer provided**
Excellent Excellent level of understanding of development architectures, critical comparison technically, and also focusing on other environmental factors, Higher level of depth and breadth of study with extensive reading and integration of information from a wide range of sources.	**14-20**	
Good Reasonable level of understanding of development architectures and critical comparison technically, Good level of depth and breadth of study,	**12-14**	
Satisfactory	**8-12**	

A reasonable level of understanding of development architectures and comparison, a satisfactory level of depth and breadth of study		
Poor Limited understanding of development architectures and poor comparison. Limited reading, lack of depth and breadth of study	**0-8**	

Task 2 contains 60 marks

Criteria	**Marks** **Out of 60**	**Marks obtained by the student for the answer provided**
Excellent Exceptional solution focused on reuse, maintainability, use of proper architecture, error-free and innovative features, demonstration with proper planning, proper flow, and good presentation skills with clear explanations.	**42-60**	
Good Good solution complete application satisfying all user requirements, Proper error handling, Proper demonstration planned and well structured	**36-42**	
Satisfactory A basic application that can run without any build errors, and fulfill the basic requirements. Presentation and demonstration are reasonable but flawed in structure or in some other way	**24-36**	
Poor Develop solution run with build errors, lack of error handling and validation, the presentation and demonstration is incoherent, incomplete, or seriously weak in other ways	**0-24**	

Task 3 contains 10 marks

Criteria	**Marks** **Out of 10**	**Marks obtained by the student for the answer provided**
Excellent Excellent justification for the selected test techniques. A proper set of test cases to conduct a comprehensive test for the developed solution with proper test data. Selection of appropriate test data. Conduct tests and critically analyze test results.	**7-10**	
Good Good justification for the selected test technique. Test cases to cover testing of entire applications with meaningful data. Conduct tests and a critical analysis of test results.	**6-7**	
Satisfactory	**4-6**	

Reasonable justification of test techniques and test cases to test the basic functionalities successfully. Analysis of test results.		
Poor Limited justification for test technique selection and incomplete set of test cases, improper set of test data. Poor analysis of test results.	**0-4**	

Task 4 contains 10 marks

Criteria	**Marks** **Out of 10**	**Marks obtained by the student for the answer provided**
Excellent Excellent justification for the selected deployment techniques, by critically comparing with other available deployment options. Excellent explanation of the selected technique.	**7-10**	
Good Good justification for the selected deployment techniques, by critically comparing with other available deployment options. Proper explanation of the selected technique.	**6-7**	
Satisfactory Reasonable justification for the selected deployment techniques, by comparing with other available deployment options. A satisfactory explanation of the selected technique.	**4-6**	
Poor Limited justification, limited comparison with poor explanation	**0-4**	
Total Marks	**Out of 100**	