

Pass Task 6.1. Messaging

1. Asynchronous communication: In an asynchronous communication, senders can communicate with receiver in a non-continuous stream. Unlike synchronous communication where the order of information transmit is guarantee, information transmitted via asynchronous communication can happen at a random rate. Comparing to face-to-face communication where sender transmit information and receiver receive information at the same time, the order of information arrived to the receiver in asynchronously communication is not guarantee to be the same as the original source. An example of asynchronous communication is Email system where sender can send a few emails at any time and the receiver can open the last mail arrive first before the first email arrived.

2. Messaging Domain (Queue and Topics): Messaging Domain defines the methods of how a client can sent message to others. Ultimately, there are 2 approaches to messaging: point-to-point domain and publish/subscribe domain. In point-to-point domain model, message will be kept in a queue until the destination client is ready and pull messages out of the queue to read. In publish/subscribe domain model, messages are kept in a central repository or a topic. This repository allows other clients to subscribe to a set of message structures and be notified when such message is published by other clients. It is possible on this model that a message can have zero or multiple consumers.

3. Messaging Clients (Producer and Consumer): This is the endpoint where a message is generated and received to process. In messaging model, there are 2 types of clients: producer and consumer. Producer client is the endpoint where message is generated whereas consumer is the endpoint where message is read and processed.

4. MSMQ and Message Object: In .NET MSMQ is a messaging service application that provides a set of tools and services for rapid development of a Reliable Messaging service. MSMQ is a build-in service and available on all version of Windows Server and some high-end version of Windows such as Windows 7 Professional, Windows 7 Ultimate. MSMQ service implements both Point-to-Point and Publish/Subscribe model by using MessageQueue service. MessageObject is an instance of Message class that allows developer to create a Message on the Message Queue service of a MSMQ. There are many implementation of messaging service equivalent to MSMQ such as JMS, RabbitMQ, ActiveMQ, Amazon Simple Queue Service (SQS) in cloud computing.