

FIT1005
Networks and Data Communications
Tutorial – Week 11

Objective of this tutorial:

The purpose of this tutorial is to make student revise and reflect on some important concepts, such as routing, fragmentation, and connectionless and connection-oriented data transfer, related to internetworking.

How to participate in the tutorial:

Form groups of four students in each and discuss the answers for the following revision and reflective questions with the group members. After spending about 15-20 minutes for each question, discussing with group members, discuss your solutions with the tutor and other groups. The tutor will provide feedback on your solutions.

Revision questions:

1. If dynamic routing is used, the potential exists for a datagram to loop indefinitely through the internet. How could this problem be overcome in IP architecture?
2.
 - a. If datagrams can be fragmented in the course of their travels, the question arises as to where they should be reassembled. What are implications of allowing immediate router reassembly (at the next router after fragmentation)?
 - b. What are the implications of performing reassembly of a fragmented datagram at the destination only?

Reflective questions:

1. For connection-oriented transfer, it is sometimes desirable to use only a connection identifier during the data transfer phase. Reflect on the advantages of using a connection identifier.
2. Typically, a connection-oriented transport service awaits an acknowledgment until a timeout expires, at which time the block of data will be retransmitted. In general, longer times are required for successful delivery across multiple networks. Reflect on the implications of this scenario.
3. For the purpose of routing, each end system and router maintains a routing table that lists, for each possible destination network, the next router to which the datagram should be sent. Reflect on this