Comp 2322 Computer Networking Homework Four

Due time: 11:59pm, April 1, 2023, Saturday

Total marks: 10 points

Submission Requirements:

You need to submit the homework to the blackboard via Learn@PolyU on or before the due time. Late submission will cause the marks to be deducted 25% per day.

Questions:

1) (4 points) Consider a network using 8-bit host addresses. Suppose a router uses longest prefix matching and has the following forwarding table:

Prefix Match	Interface
00	0
010	1
011	2
10	2
11	3

For each of the four interfaces, give the associated range of destination host addresses and the number of addresses in the range.

- 2) (1 point) Suppose datagrams are limited to 1,500 bytes (including header) between source Host A and destination Host B due to the link has an MTU of 1500 bytes. Assuming a 20-byte IP header, how many datagrams would be required to send an MP3 file that consists of 3 million bytes when using TCP? Explain how you computed your answer.
- **3**) (5 points) Consider the network below. Please use Dijkstra's shortest-path algorithm to compute the shortest path from node *h* to all network nodes.

