Assignment 1: Interconnection networks

Total marks: 30

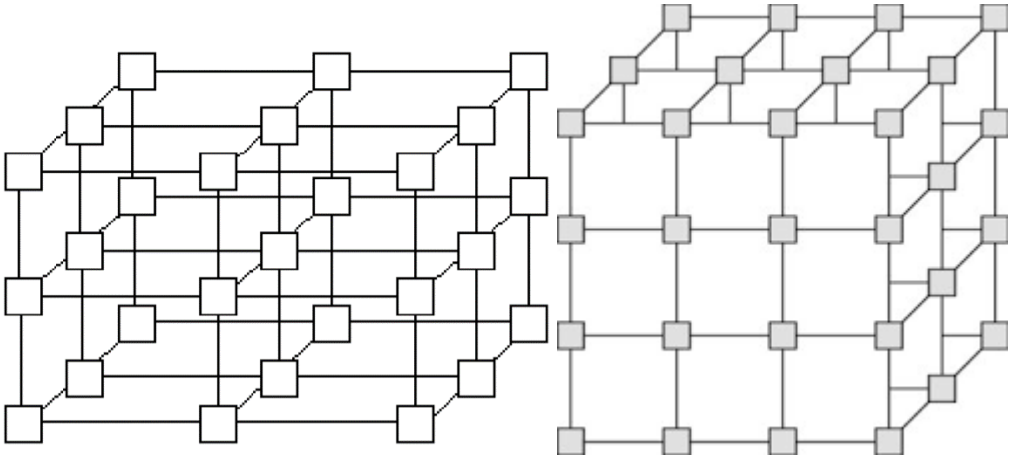
Dated: 3-3-2020

Deadline: 10-3-2020

Question 1:

10 marks

Derive the diameter, bisection width, arc connectivity, and cost of a 3D mesh. You must write justification for the formula you derive.



Question 2:

10+10 marks

Write a C++ program that constructs hypercube for an input dimension. Your code should be generic for all the dimensions. Additionally, all the nodes should be labeled with binary representation.

Write a C++ program that finds the minimum distance between the two nodes (nodes specified as an input) by analyzing the labels and checking the varying bits.

Submission guidelines

You can submit Question 1 in any way that is convenient to you (either in image form by taking picture of your solution on paper or MS Word). Submit one .cpp file with preferably three separate functions for 1) construction of hypercube, 2) labelling, 3) finding minimum distance between nodes. Zip your submissions (Question 1 and 2) to one .rar or .zip file and email it to **natalia@pucit.edu.pk**