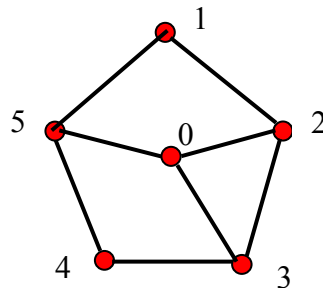


Name: _____ ID: _____

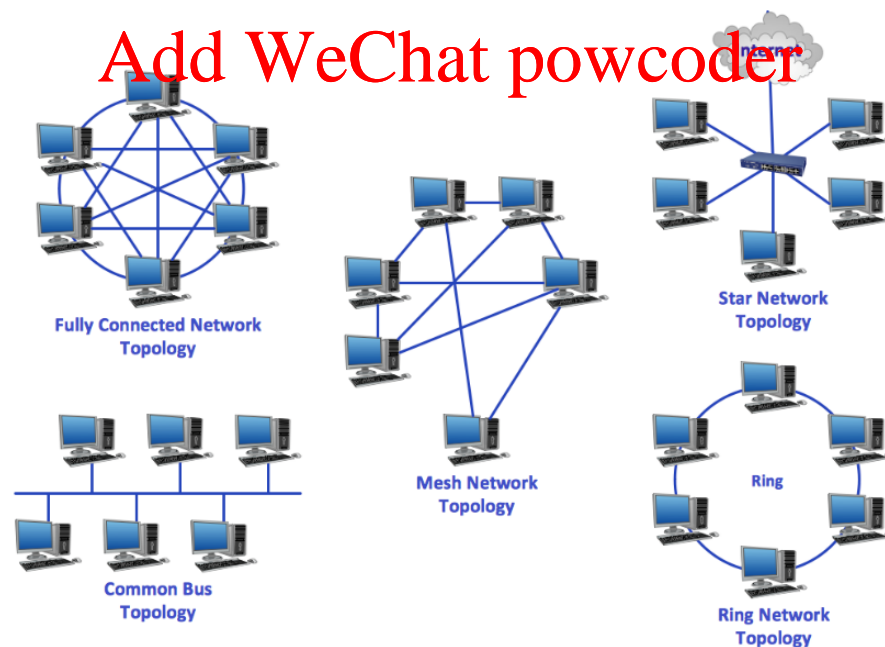
HOMEWORK PROBLEMS #1

- 1-1 Given a star network as shown below, compute its average path length L , diameter D , average cluster coefficient C , average degree $\langle k \rangle$, core values of each node and the whole network, node betweenness of node 0, edge betweenness of edge E_{05} , and coreness of the whole network.



Assignment Project Exam Help

- 1-2 The following figure shows some common Internet building blocks, where the “mesh network” can be considered as a “small-world network” in this discussion. Briefly comment on the *advantages* and *disadvantages* of each topology (please itemize your answers).



1-3 Briefly describe one *good example* that you can think of, from your life experience but not from the Lecture Notes or ppt, for each of the following models:

- (i) Random-graph network
- (ii) Small-world network
- (iii) Scale-free network
- (iv) Weak-tie phenomenon
- (v) 80-20 rule
- (vi) 90-9-1 rule

Assignment Project Exam Help

<https://powcoder.com>

Add WeChat powcoder