EE6094 CAD for VLSI Design
Flipped Classroom Discussion for Chap 3

1. Consider Hu's algorithm we discussed in the flipped classroom
   (a) Can this algorithm provide one and only one exact solution? Will the solution be optimal?
   (b) What are the limitations if you would like to apply Hu's algorithm?
   (c) If you want to implement Hu's algorithm in C++, how will you design your data structure?
   (d) How to implement the labeling part? Explain your considerations.

2. Consider the Data Flow Graph (DFG) shown below. Assume the **addition takes 2ns and multiplication takes 3ns**.
   (a) Assume no hardware limitation. Perform the ASAP algorithm and write done when each task starts to be executed. (The begin time is 0ns)
   (b) Assume no hardware limitation and the deadline of this task is 10. Please perform ALAP algorithm and write done when each task starts to be executed. If not possible, please describe why.
   (c) Assume we only have two adders and one multiplier. Perform List schedule algorithm and write done when each task starts to be executed. Note that when two or more tasks have the same priority, the one with smaller task ID number will be executed firstly.
   (d) What kind of data structure you may need to implement ASAP and ALAP? Do you think it is a good idea to use the same data structure for implementing List algorithm? Please provide your opinion.