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CSE 417

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**Homework I**

* 1. S - size
  2. The edges in this graph are defined by the hemming cost and the purchase cost of jean size x. As these edges have been minimized, the shortest path in this graph also translates to the lowest cost path for this problem.
  3. To find the shortest path, you can employ an algorithm like Dijkstra’s Algorithm to find the minimum path.
  4. To account for this feedback, I would eliminate the edges that jump more than three sized down. That way, the shortest path will only account for hemming at most two sized down.
  5. M - month
  6. The edges are defined to be the minimum cost of purchasing and storing jeans on a per unit basis. With this definition of the edges, we can use the graph to find the cheapest way of making jeans for a month k. This is because the edges have been minimized.
  7. Use a shortest path algorithm like Dijkstra’s algorithm to find the shortest path.
  8. Determine the shortest path to node k and the shortest path from month k to month 12. Whichever is the maximum of the two values will determine how much storage is needed in month k.
  9. It is not possible to find a shortest path using the same method as problem 1. The reason is because even though each node has its shortest path, the summation of all the shortest paths may not correlate to one complete path from node 0 to node 12.