Assignment Description

Develop a spreadsheet model to analyze the following three strategies and compare their associated costs.

(A) *Chase strategy*: In each month simply produce exactly the same amount as the forecast demand.

Production should be based on regular time only. No over time and no spot market!

(B) *Level strategy*: Keep the number of employees constant (20 in this case). Do not hire or lay off. Meet demand by utilizing the current capacity (20 employees), and make employees work over time if necessary and purchase from the spot market if more is needed.

(C) *Optimal strategy*: consider all possible variables (hiring, laying off, regular time, over time, and spot market) under your control, what is the best solution you can come up with?

Submit a report of no more than four pages. Your report should be concise and contain all key results and findings. Feel free to add an appendix if you would like to include more detailed analysis in your report. There is no page limit on your appendix. Your report should include at least the following three sections: (1) introduction and problem description; (2) analysis; and (3) conclusion and discussion. In your analysis section, state all your assumptions as provided in the case and this document. If the two conflict, follow the information provided in this document. Make additional assumptions if necessary. When you write your report, DO NOT simply answer these questions like a homework assignment. You should treat it as a mini business consulting project when you write the report. *Be sure to submit the Excel file that contains your analysis*. Your Excel files should be structured in a way that is easy for me to follow along.

Use the cost in the following table.

Cost Factor	**Cost ($)**
Regular time	200 per thousand board feet
Over time	250 per thousand board feet
Holding	25 per thousand board feet
Hiring cost	4,000 per employee
Laying off cost	2,000 per employee

Hints:

Given monthly demand, there are three ways to meet the demand:

(1) Adjust the number of employees (and hence production capacity) by hiring or laying off at the beginning of each month.
(2) Let the employees work overtime (note: no more than 25% of normal working hours)
(3) Purchase from the spot market.

You should consider five types of cost when comparing the costs associated with different strategies.

(1) Regular time labor cost (note: each employee should be paid in full amount even if they don't work full 160 hours)
(2) Over time labor cost (this is based on the actual over time hours each employee works).
(3) Hiring and laying off costs. (only if you need to hire new employee or lay off current employees).
(4) Inventory holding costs (if at the end of a month, there is remaining inventory that needs to be carried over to next month, there is a cost incurred).
(5) Purchasing cost from spot market (Note: producing in Chile incurs shipping cost which is 50 per 1000 board feet. Purchasing from the spot market doesn't incur such costs. In this case, we can ignore shipping cost and treat the spot market price as $400-$50=$350 per 1000 board feet).

Note: in your analysis, simply ignore lead time for harvesting and shipping, which was one month as indicated in the case.