Project
Grading 25% Executive Summary, 25% Technical Report, 50% for the correctness of your solution and the technique used.

You work for a consulting firm and have been assigned to work for Sers, which sells big screen TV's. Since more TV's are sold on weekends, Sers is closed on Monday and Tuesday of every week. For plasma TV's the average demand during a week is as follows:

0 TVs demanded 10% of the time
1 TVs demanded 20% of the time
2 TVs demanded 40% of the time
3 TVs demanded 25% of the time
4 TVs demanded 5% of the time

The contract with the supplier states that they can only order on Monday morning and that the TV's will arrive by Wednesday morning. You have a maximum ability to store 12 TVs in your store.

Every TV sells for $3,000. The order cost is $1,500 per TV, plus a $500 fixed ordering cost. Each TV held in inventory costs $50 per week. If a customer comes in and you don't have a TV in stock, then the TV is specially ordered and delivered to their house for $2,000. In addition, you estimate a penalty of $300 due to the likelihood of the customer not returning.

Sers currently has a Q\R inventory policy (quantity\reorder) (Also known as a S,s inventory policy) with Q=12 and R=6. As long as the inventory at the end of the day is R or more, then no order is placed. If the inventory is strictly less than R, then an order is placed so that the store opens with Q items (i.e. Sers will open on Wednesday with 12 TV's on hand.) Sers has asked your company to evaluate this policy and determine optimal values for Q and R.

As a simplification of the model, Sers has agreed that the demand from week to week is constant and that the demand from week to week is memoryless. The memoryless property would be that a high/low demand this week does not change the demand for the following week.

Follow a similar format as the previous projects (1 page executive summary and a technical report).