

# Golf-Sport: Managing Operations

## A Case Study in Optimization

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## **1 Introduction**

This problem examines a manufacturing optimization case.....

## **2 Description of Problem**

This is where we describe what the problem we are trying to solve is

## **3 Background and Prior Work**

Here is a good spot to insert our necessary references. We can evaluate solutions of similar problems

## **4 Mathematical Formulation & Model**

### **4.1 Assumptions**

Here we add assumptions about 2 month not going concern, minimization of inventory, selling all of per 1 and using period 3 for carryover

### **4.2 Variables**

List our variables and indices, maybe in a table if i can figure out how to do it

### **4.3 Objective**

Here we put in our objective function and explain the goal behind it

### **4.4 Constraints**

Here we list all constraints in with an explanation surrounding each

### **4.5 Heuristics**

Just kidding, this problem is not big enough for any heuristics

## **5 Implementation**

### **5.1 Hardware & Software**

Problem was solved using MATLAB R2017B It was run on a computer.....

### **5.2 Coding**

Code

### **5.3 Algorithm**

Run as an IP using `optimproblem`, which is essentially an interior points method of solution. Will run an LP to examine solutions

## **6 Solution**

Explain results, compare to linear relaxation of the problem  
maybe insert a section with a graph or chart to visualize production

## **7 Further Analysis**

Conduct range sensitivity, examine extra problems in case study

## **8 Conclusions & Implications**

### **8.1 Mathematical Approach**

Evaluate our approach, suggest changes in future. EFFICIENCY

### **8.2 Company Approach**

Discuss optimized solution, range sensitivity, business suggestions

## References

[1]