**WEEK 8 HOMEWORK­­**

**Question 18.1**

Describe analytics models and data that could be used to make good recommendations to the power company.

Here are some questions to consider:

* The bottom-line question is which shutoffs should be done each month, given the capacity constraints. One consideration is that some of the capacity – the workers’ time – is taken up by travel, so maybe the shutoffs can be scheduled in a way that increases the number of them that can be done.
* Not every shutoff is equal. Some shutoffs shouldn’t be done at all, because if the power is left on, those people are likely to pay the bill eventually. How can you identify which shutoffs should or shouldn’t be done? And among the ones to shut off, how should they be prioritized?

Think about the problem and your approach. Then talk about it with other learners, and share and combine your ideas. And then, put your approaches up on the discussion forum, and give feedback and suggestions to each other.

# You can use the {given, use, to} format to guide the discussions: Given {data}, use {model} to {result}.

Have fun! Taking a real problem, and thinking through the modeling and data process to build a good solution framework, is my favorite part of analytics.

I will first start by reviewing the information from Lecture Slides and add some details.

*Power Company – Case Study*

*Turn off Power*

* *Turn off for those not ever going to pay*
* *Not people who forgot or got behind of the payment (Might pay later)*

*Logistical Problem*

* *Manually shut off*
* *Go to location*
* *More work than the company could handle*

Use Simulation to determine how many workers

*Considerations*

* *Which shutoffs should be done each month?*
* *Some of worker’s time is taken up by travel. Schedule accordingly*
* *Some shutoffs shouldn’t be done at all. How do you identify those?*
* *How should shutoffs be prioritized*

*Summary*

* *Data you will need*
  + Payer list
  + Historical payment (Include Seasonal and Trend)
* *Models you will use*
  + *Different approaches*
  + *Cannot tell whether a model works*
  + *Unless tested on real data*
* *Think*
  + *Analytics modeling component*
* *Discuss – share and combine*
  + *Use {given, use, to} format*

Given

1. List of Payers
2. Historical payment (Include Seasonal and Trend)
3. Electrical usage per month

Use

1. Simulation
2. Regression
3. Variable Selection

To

1. asdf