Your conclusion has been saved

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The Logic of Analyzing a Problem:

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The problem you are analyzing: To predict the sales of Walmart store.   Created Saturday Feb 22 2014, 10:29 AM

Edit/Return to your Problem

The logic of the question you have reasoned through can be found here. Beside each of your answers, you will find checkpoints, or guidelines for making sure you have reasoned well through each element. If you are unclear as to how to interpret any of these "checkpoints," read more deeply about the elements of reasoning and intellectual standards.

Statement of the problem:
Project sales for each department in each store of Walmart. To predict which department is impacted due to markdown events To identify to what extent the impact has affected.

- The key **question** at issue is...

How missing values will affect the weekly sales? What is the relation between CPI and markdowns? What does unemployment means in this context and how is it related to weekly sales? How unemployment, temperature and fuel price affects weekly sales? How all these factors affect sales across different departments and different stores.

Clarify the question: Have I stated the question as clearly and precisely as possible? Have I stated the question so as to detail the complexities in it? Does my formulation of the question give me [or others] some unjust advantage?

- The **purpose** of reasoning through the issue is...

The purpose is to help Walmart management to dissect and analyse their sales statistics and the performance of store and department especially during the markdown events. This will improve their decision making.

Check your purpose: Have I stated the question as clearly and precisely as possible? Have I stated the question so as to detail the complexities in it? Does my formulation of the question give me [or others] some unjust advantage?

- The **information** I need to use in answering this question is...

We have 4 data files namely features.csv, test.csv, train.csv, store.csv. These files contain sales data for 45 Walmart stores across the country. We have observed that sales vary considerably during markdown events. We have missing values for the attributes Markdown, CPI and unemployment. We observed that, there is a remarkable rise in sales for

Assess your information: Have I included all the important relevant information? Have I left out any relevant information I would rather not have to consider? Have I checked to see that my information is accurate?

November and December.

- The **assumptions** I am making when reasoning through this issue are...

1. We assume that markdown affects CPI because when there is a markdown for a product then there will be change in the CPI which in turn impacts the weekly sales. 2. Missing values are important in our analysis of weekly sales. 3. The variation in the graph that we observed for 2012 sales prediction from the actual sales values is primarily because of the missing values in markdowns.

Identify assumptions: Do I recognize the beliefs I have taken for granted in reasoning through this issue? In other words, have I uncovered the important assumptions guiding my thinking in this situation? Have I questioned assumptions that may not be based in sound reasoning? Am I holding onto assumptions that cannot be justified based on the evidence?

- The primary **concepts** guiding my reasoning about this issue are...

We have used 2 pre-processing steps. 1. Since attributes in features have impact on weekly sales in train data set, we merged them. 2. We have also handled missing values using weka which replaces all the missing values by the mean and mode of that column. We have used regression algorithms like linear regression & sequential minimal optimization to predict the weekly sales for stores 3,5,14,18 &20 and departments 11,12,13 & 92.

Understand the concepts: Have I identified the main concepts guiding my thinking through this issue? Am I even clear about what a concept is and the role concepts play in human thinking? Have I distorted some idea to fit my vested interest? Do any of my concepts need to be questioned? Have I thought deeply about the concepts I am using? Am I using concepts superficially?

- Some important **implications** of reasoning through this problem well or poorly are...

Walmart will be able to identify which departments and stores are affected by markdown events and the extent of the impact. With this knowledge Walmart will be able to strategize better to boost their weekly sales.

Recognize the implications: Have I traced out the important implications in this situation? Have I thought through the potential negative as well as positive implications connected with this issue? Are there implications I would rather not face, and so I am refusing to consider them? Have I anticipated the implications of the obvious implications, and then the implications of those implications, and the implications of those implications, and so on, as well?

- The **point of view** from which I am looking at this situation is...

We are looking at the problem from the point of view of a Walmart sales manager who would want to accurately predict sales for department and store across time.

Consider your Point of View: Have I considered all important viewpoints relevant to this situation before formulating my viewpoint? Have I inadvertently distorted some other viewpoints in order to maintain my viewpoint? Have I articulated and considered other ways of looking at the situation, in good faith, before coming to conclusions about how to think and how to act?)

- In reasoning through this issue, the main **inferences** I have made and **conclusion(s)** I have come to, in terms of how to deal with the issue are…

With the data we have, we interpret that the sales across each department in a single store varies, markdowns are not constant across departments, it varies from holiday to holiday. By comparing all the regression algorithms using weka, we found that

Analyze your interpretations: Am I clear about the inferences I have made in coming to this conclusion? Have I considered the fact that any or all of my inferences may be more or less sound? Do my inferences clearly follow from the evidence, or have I failed to consider important information in coming to my conclusions? Can I articulate the assumptions

| SMOreg suits best to our data for predictions. | that have led to my inferences? Do I have a vested interest in coming to a particular conclusion, and if so, has this clouded my judgment? |

Summary:

While reasoning through the logic of this problem, I have gained the following insights and come to the following decisions.

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After analyzing the data we observed it is continuous and estimation
techniques like regression are helpful in prediction. We will
persevere to unearth meaningful patterns from the data and
correlation between attributes that will aid us in our predictions.
We used SMO regression algorithm to predict weekly sales for 2013
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[Save Conclusions / Finish Problem]

If you are unclear as to how to interpret any of these "checkpoints," read more deeply about the elements of reasoning and intellectual standards. We suggest the following materials:

- The Thinker's Guide to Analytic Thinking
- Critical Thinking: Tools for Taking Charge of Your Professional and Personal Life
- Critical Thinking: Tools for Taking Charge of Your Learning and Your Life

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