## Applications of Decision Tree in Machine Learning

1. **Select a flight to travel:** Decision trees are very good at classification and hence can be used to select which flight would yield the best "bang-for-the-buck". There are a lot of parameters to consider, such as if the flight is connecting or non-stop, or how reliable is the service record of the given airliner, etc.
2. **Selecting alternative products:** Often in companies, it is important to determine which product will be more profitable at launch. Given the sales attributes such as market conditions, competition, price, availability of raw materials, demand, etc. a Decision Tree classifier can be used to accurately determine which of the products would maximize the profits.
3. **Sentiment Analysis:** Sentiment Analysis is the determination of the overall opinion of a given piece of text and is especially used to determine if the writer's comment towards a given product/service is positive, neutral or negative. Decision trees are very versatile classifiers and are used for sentiment analysis in many Natural Language Processing (NLP) applications.
4. **Energy Consumption:** It is very important for electricity supply boards to correctly predict the amount of energy consumption in the near future for a particular region. This is to make sure that un-used power can be diverted towards an area with a higher demand to keep a regular and uninterrupted supply of power throughout the grid. Decision Trees are often used to determine which region is expected to require more or less power in the up-coming time-frame.
5. **Fault Diagnosis:** In the Engineering domain, one of the widely used applications of decision trees is the determination of faults. In the case of load-bearing rotatory machines, it is important to determine which of the component(s) have failed and which ones can directly or indirectly be affected by the failure. This is determined by a set of measurements that are taken. Unfortunately, there are numerous measurements to take and among them, there are some measurements which are not relevant to the detection of the fault. A Decision Tree classifier can be used to quickly determine which of these measurements are relevant in the determination of the fault.