## OUR MODEL

1. We intent to get the data about key events of companies like M&A deals, quarterly results, project announcements, bonus issues, etc from NSE/ BSE websites. We will be specifically looking at the time of declaration of these events, i.e., when the information is available to public at large.
2. Around the time of release of the data, we will collect 1-minute tick based trading data from NSE or Bloomberg for the entire day.
3. We expect to find spikes in that data during the day, and the timing of the spikes might point to some insider trading.

Challenges:

1. As simple as it may sound there are issues with regard to the definition of spike. There are chances that the spike is a spooky trade, which is due to mistake of some trader entering the trade wrongly. So we define the spike due to new information, absorbing the changes into the price as one which extends for more than 2 or 3 ticks. This definition can be refined based on the confidence interval attained by sampling such spooky trades in the market.
2. The above described spikes can be due to uncontrollable factors beyond those under the purview of the stock under consideration. These factors can be described as systematic factors, which will influence the market as a whole. So if we can find a good amount of correlation as described by the beta of the stock, we can ignore the spike as a systematic factor.
3. The next important question of whether the spike is due to speculation or insider trading needs to be addressed. We feel that a very important factor in distinguishing such trades is the time lag between the spike and the release of public news. The close the spike to the time of release (T), the slighter are the chances to make abnormal profits due to insider information. So arriving at a confidence interval on this time lag (L) will help us in narrowing down those trades, which can be suspected to be insider trades. This checking should be automatically done either by the regulator or exchanges through software systems running parallel to order books. Alerts given by the systems will lead to a second round of investigation which can involve a little of manual proceedings.