**Assignment 7**

**1. Research Question**

Determining how the accuracy of the crowd varies as per the time of day at which respondents answer the questions. Also, in any given time frame of the day, what effect the size of crowd has on accuracy.

**2. Literature**

We found no previous research papers or journals on how time of day varies the accuracy of the crowd. As far as size of crowd is concerned, larger the crowd, wiser it is, was suggested by the following literature:

[1] Wisdom of the Crowds: Decentralized Knowledge Construction in Wikipedia

**3. Experiment**

Two different types of tasks are chosen:

a) Prediction based questions ( Box office collection of a movie )

b) Knowledge based questions ( Word Origin )

For each of the above two types of tasks, users would be asked to submit their responses. Equal number of responses would be considered for each hour of the day over the time period of collection of responses.

**4. Analysis of Data:**

The accuracy of a crowd would be defined as follows:

a) Prediction based questions:

Suitable statistical methods like mean, median etc. would be used and the method leading to the closest answer in most cases would be chosen uniformly over tasks.

b) Knowledge based questions:

The percentage of correct answers of the multiple choice questions would be the measure of accuracy.

The entire day would be divided into 8 time frames – 12am -3 am, 3am -6am ... 9pm-12am.

For each given time frame, accuracy as defined above, would be calculated. The results of a similar type of task (prediction or knowledge based) accross the different time frames would be compared and the pattern (if any) would be observed.

This would determine if the accuracy of crowd changes depending on the time of day in both prediction and knowledge based tasks.

A uniform random selection of a smaller crowd would then be done and the above analysis would be repeated. The results would then be compared with the larger crowd data and it could be determined if a smaller crowd or a larger crowd performs better at a given time of day. Also, the size of smaller crowd data set would be increased slowly to determine if there are any sharp changes in accuracy when the size of crowd reaches a certain limit.