Hypothesis Testing

Hypothesis

- A hypothesis is nothing but a proposed explanation for a phenomenon.

Hypothesis Testing

Class 8th students have a mean score of 40 marks out of 100. The principal decided that some music while teaching would improve the performance of the class. The class scored an average of 45 marks out of 100 after taking these classes. Can we be sure whether the increase in marks is a result of the music or is it just by random chance?

- Check a sample statistic against a population statistic
- Check a sample against another sample to check for differences
- Check the sample with the same sample post intervention

Null and Alternate Hypothesis

- **Null Hypothesis** can be that the sample statistic to be equal to the population statistic or that the intervention doesn't bring any difference to the sample.

- **Alternate Hypothesis** basically negates the null hypothesis or says that the intervention brings a significant difference to the sample, or that the sample is significantly different from the population

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Hypothesis Testing

- Hypothesis Testing is done on different levels of confidence, and makes use of z-score to calculate the probability

- We cannot accept the Null hypothesis, only reject it or fail to reject it

- As a practical tip, Null hypothesis is framed on the statement we want to disprove. Check a sample to another sample to check for differences

- We might make errors while making conclusions using hypothesis testing

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