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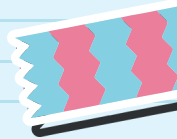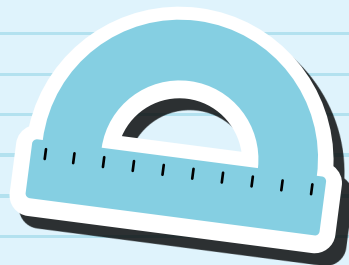
Introduction

A/B Testing - Eniac

A

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02

Significant Results

How can we make sure, the results re not simply due to chance!

General
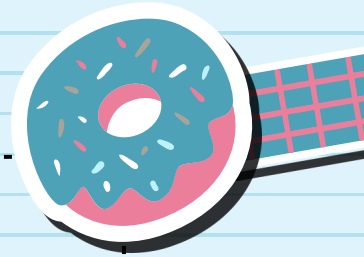
- Keep the original version as a baseline
- Start with bigger / radical changes
  - until the landing page is optimized
  - then change small things such as button color

Determine Goal and Performance Measure

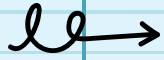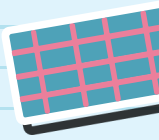- The more significant the conversion is the less likely for conversions to be random
  - more significant that I put an item in my basket vs. adding my delivery information because by then I have committed to the purchase
  - This is also important for the determination of the statistical test (Chi-Squared vs. T-Test...)

Statistical Significance

Hypothesis Testing
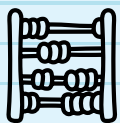
H0:

There is **NO** difference in the four versions
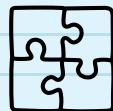
H1:

There is a difference

Determine the Sample Size

Baseline Conversion

MDE

Minimum Detectable Effect

Alpha and beta

Sample size calculator
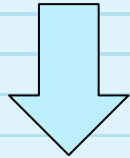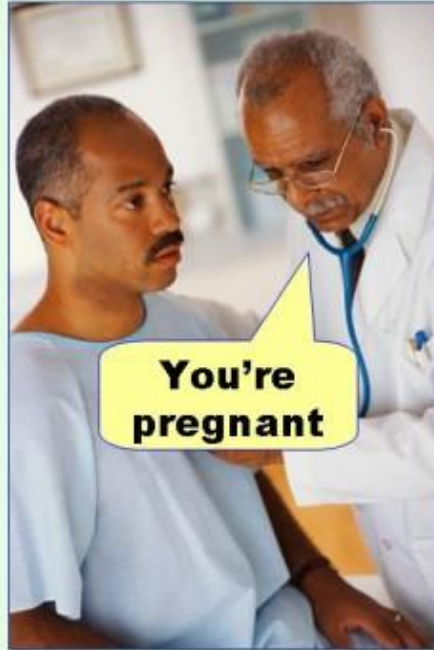
Randomness

- Ensure that the sample selection is random
- Participants don't know they are in a test (blind)
- Ensure that population is split randomly and evenly

Confidence Interval

95% - 5 %

Safe but could consider industry standard

Consider the limitations and assumptions of your A/B Test

Additional Factors

Potential Influencing Factors

- Discounts
- Market changes
- Length of the experiment

Build a Model

- That accounts for external factors
- Not realistic for most corporate A/B tests
- Regression model with Dummy Variables
- Statistical tests

Multiple Considerations

- Example A,B,C,D
- More versions increase the Type 1 Error
- Adjustments like Bonferroni or Sidák Correction

Analyze findings and document your learnings!

03

Time

How long can we expect the experiment to last?

How long can we expect the experiment to last?

1. Sample size & expected traffic
   a. Minimum required sample size:
   b. Don't stop until the sample size is reached

2. Larger sample size
   a. Require more time / resources, therefore may cost more
   b. However, reduce the cumulative alpha error

How long can we expect the experiment to last?

1. How deep in the sales funnel we are
   a. Conversion rate decreases → Takes longer to get to samples size

2. Generally speaking min 1 week (average 2 weeks) but it might make sense to run it for a month/quarter
   a. to account for seasonality and promotions
   b. Weekend vs weekdays
   c. Holidays (Christmas, 4th of July....)
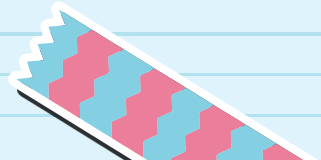
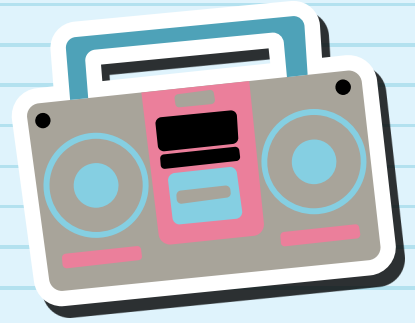# How long can we expect the experiment to last?

1. The length can be changed during the experiment when noticed the data are insufficient

2. Once enough data are found, do not stop directly but check if the results are stable over the next few days → stability
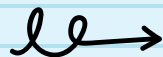
04

Conclusions

Main Ideas

Findings

- Build and test a reliable statistical model
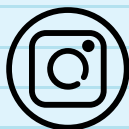- Use enough time to attain a large enough sample size

Thanks!

Do you have any questions?

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