

CAPSTONE OPTION I: MUSCLEHUB A/B TEST

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AGENDA

- A title slide
- A description of what happened in this A/B test
- A summary of your dataset and any information you think would be helpful background
- The results of the three hypothesis tests that you ran, including an explanation of the type of test that you used and why it was appropriate
- A summary of the qualitative data
- A recommendation for MuscleHub

A/B TEST DESCRIPTION

- The current funnel of the Gym onboarding looks like this:
 1. Take a fitness test with a personal trainer
 2. Fill out an application for the gym
 3. Send in their payment for their first month's membership
- Hypothesis: first funnel step (fitness test) intimidates some prospective members
- A/B test groups
 - Group A will still be asked to take a fitness test with a personal trainer
 - Group B will skip the fitness test and proceed directly to the application

DATA SET SUMMARY

- Following data in various tables is available:
 - *visits*: potential gym customers who have visited MuscleHub
 - *fitness_tests*: potential customers in "Group A", who were given a fitness test
 - *applications*: any potential customers (both "Group A" and "Group B") who filled out an application
 - *purchases*: customers who purchased a membership to MuscleHub
- We have merged *visits*, *fitness_tests*, *applications* and *purchases* in one dataframe called *df*

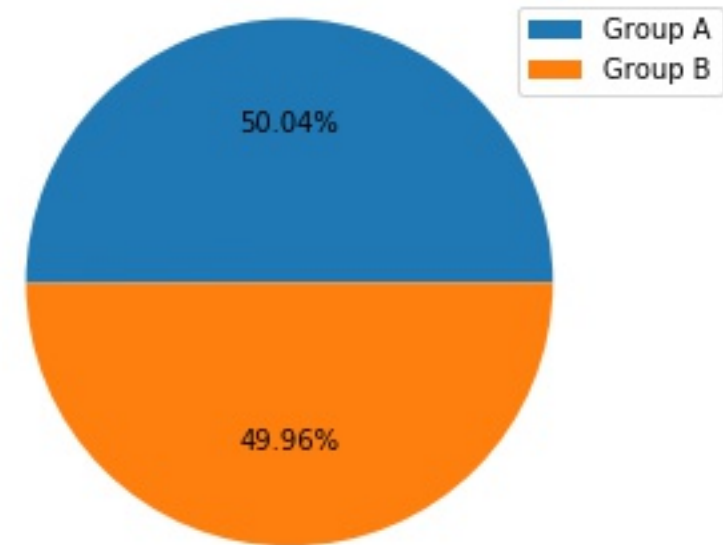
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<code>application_date</code>	575
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RESULTS OF A/B TESTS

- Having all data joined in df, we have two Groups to test against each other
- Group A contains 2504 users (50.04%)
- Group B contains 2500 users (49.96%)
- Thus, the Groups are **equally divided**

	ab_test_group	first_name
0	A	2504
1	B	2500

Size of A/B Segments

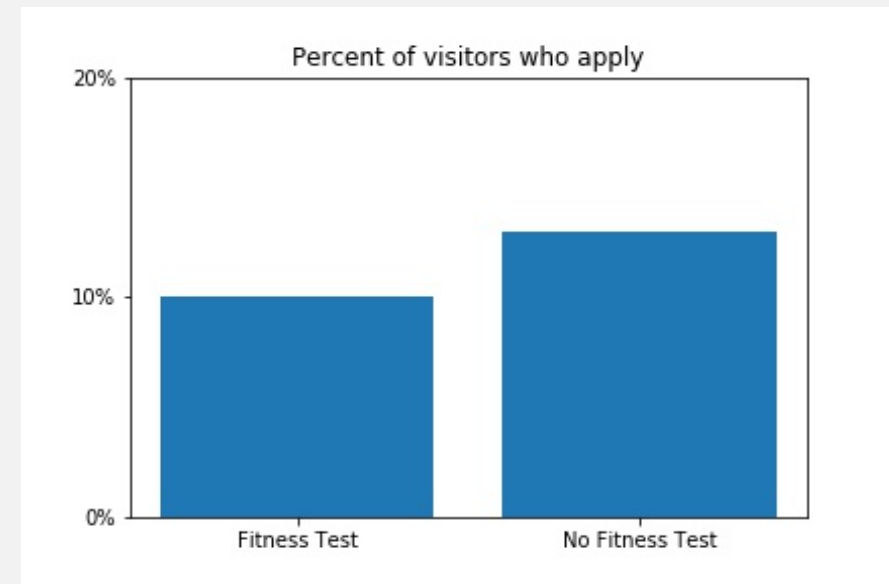


A/B TEST DESIGN

- To analyze the data, we will use the Chi Square test.
- We will use the Chi Square test, as we have two categorical data sets that we want to compare.
- The input to `chi2_contingency` is a contingency table where:
 - The columns are each a different condition Group A (Fitness Test) vs. Group B (No Fitness Test)
- The rows represent different outcomes, like visits, applications, or purchases

RESULTS OF A/B TEST (I)

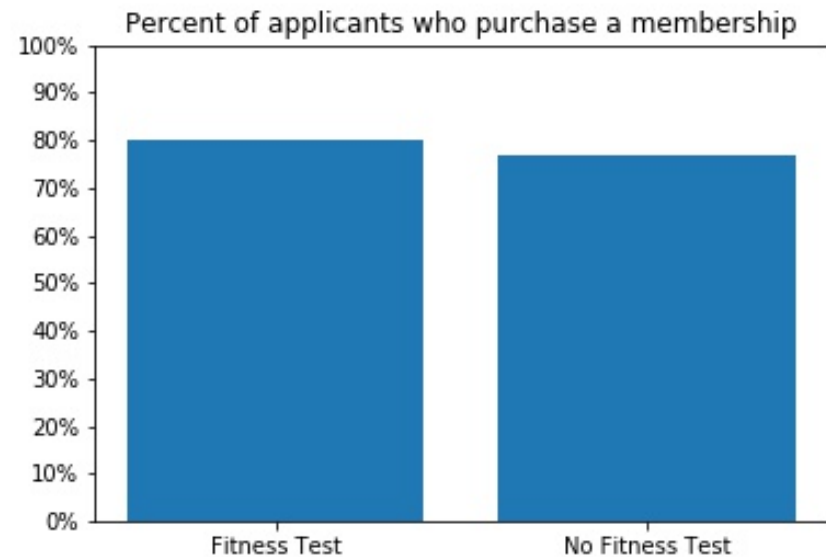
- First test: How many users fill out an application?
- 10% of Users of Group A (Fitness Test) fill out an application, whereas Group B (No Fitness Test) have a success rate of 13%
- The result is significant, as p-value is below 5% (0.1%)



is_application	ab_test_group	Application	No Application	Total	Percent with Application
0	A	250	2254	2504	0.09984
1	B	325	2175	2500	0.13000

RESULTS OF A/B TEST (II)

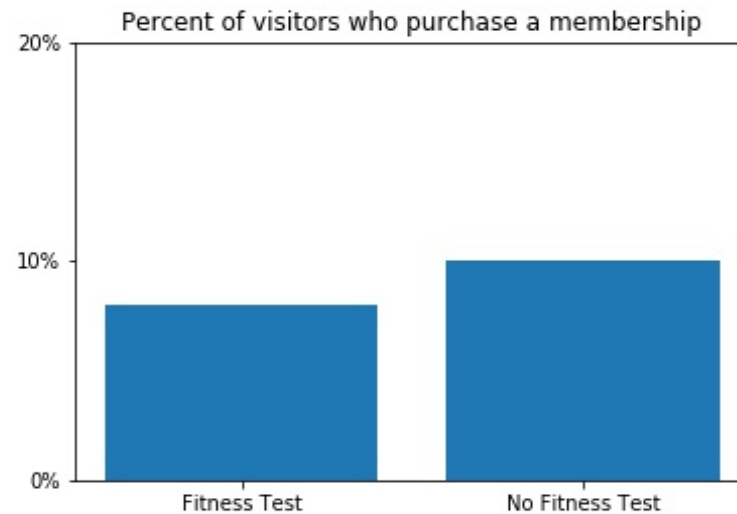
- Second test: How many users that picked up an application make a purchase?
- 80% of Users of Group A (Fitness Test) that filled out an application purchased a membership, whereas Group B (No Fitness Test) had a success rate of 77%
- The result is not significant, as p-value is above 5% (43.26%)



is_member	ab_test_group	Member	Not Member	Total	Percentage
0	A	200	50	250	0.800000
1	B	250	75	325	0.769231

RESULTS OF A/B TEST (III)

- Third test: How many visitors made a purchase?
- 8% of Users of Group A (Fitness Test) that visited purchased a membership, whereas Group B (No Fitness Test) had a success rate of 10%
- The result is significant, as p-value is below 5% (1.5%)



is_member	ab_test_group	Member	Not Member	Total	Percentage
0	A	200	2304	2504	0.079872
1	B	250	2250	2500	0.100000

SUMMARY OF QUALITATIVE DATA

- „MuscleHub’s introductory fitness test was super helpful for me! After taking the fitness test, I had to sign up and keep coming back so that I could impress my trainer Rachel with how much I was improving!“
- „When I walked into MuscleHub I wasn’t accosted by any personal trainers trying to sell me some mumbo jumbo, which I really appreciated. „
- „I took the MuscleHub fitness test because my coworker Laura recommended it. Regretted it.“
- „ I tried to sign up for LiftCity last year, but the fitness test was way too intense. This is my first gym membership EVER, and MuscleHub made me feel welcome.“

RECOMMENDATION

- As we have seen in the quantitative data, users of Group B (Without Fitness Test) converted better (+2 PP) from visitors to membership purchases
- Taking the qualitative data also into consideration, we can support the initial hypothesis that the first funnel step (fitness test) intimidates some prospective members
- Recommendation: get rid of the initial fitness test in order to convert more visitors into members!

THANK YOU!