Capstone Project: MuscleHub A/B Test

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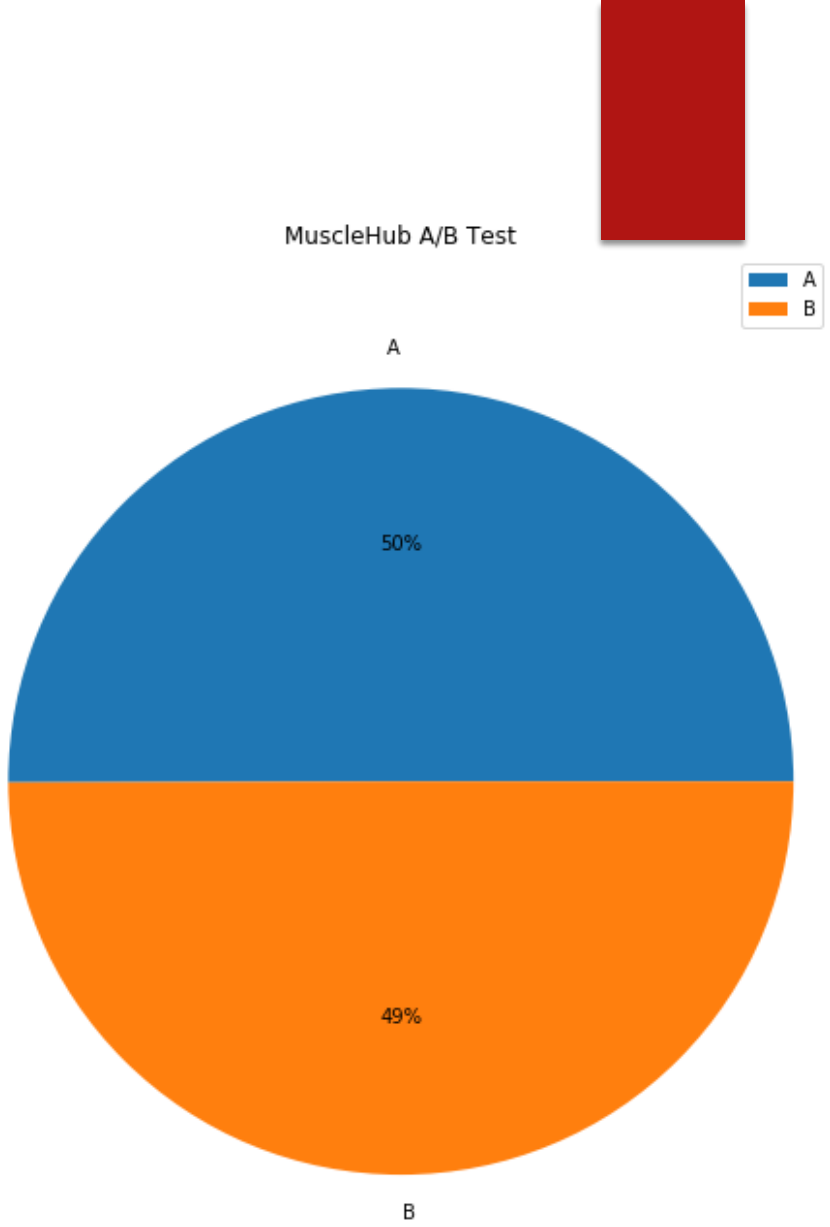
A/B Test Results

THE VISITORS WERE SPLIT SUCH THAT ABOUT HALF ARE IN GROUP A AND HALF ARE IN GROUP B. THIS IS THE FIRST STEP TO DETERMINING IF VISITORS ASSIGNED TO GROUP B WILL BE MORE LIKELY TO EVENTUALLY PURCHASE A MEMBERSHIP TO MUSCLEHUB.

- **50%** OF TOTAL VISITORS COMPLETED A FITNESS TEST. WE LABELED THIS GROUP AS "A".
- GROUP A: **2504**
- **49%** OF TOTAL VISITORS DIDN'T COMPLETE A FITNESS TEST. WE LABELED THIS GROUP AS "B".
- GROUP B: **2500**



Summary of Dataset

There were a total of **5,004** total visitors at MuscleHub, on or after July 7th, 2017.

- Group A turned in **250** applications
  - **2,254** did not turn in an application
- Group B turned in **325** applications
  - **2,175** did not turn in an application
- Out of **250** applicants, **200** purchased memberships from Group A. (those who completed an application)
  - **50** applicants did not purchase a membership
- Out of **325** applicants, **250** purchased a membership from Group B.
  - **75** applicants did not purchase a membership

Hypothesis Results

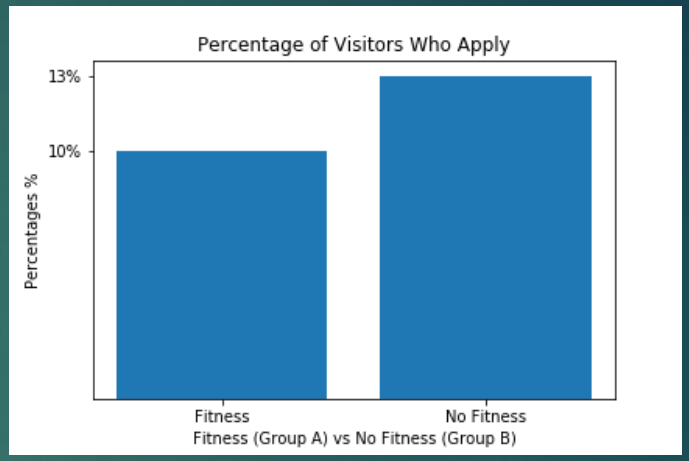
For the second step we determine the statistical significance through Hypothesis Tests. A Chi Square Test was used for all three hypothesis tests. When comparing two Options (Group A and Group B), it is best to conduct this type of test.

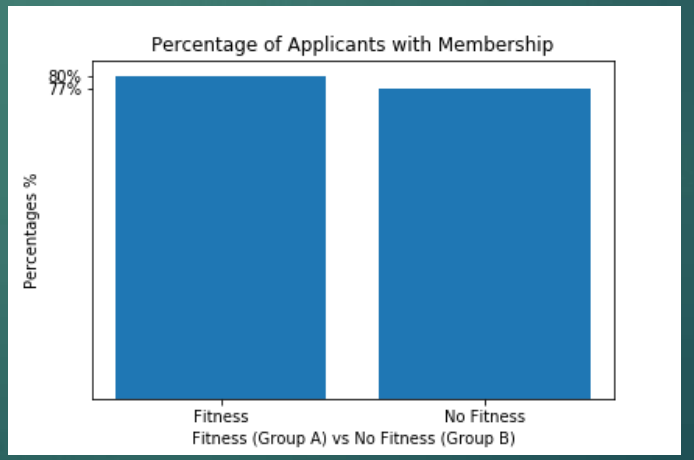
- **Hypothesis Test 1: Percent of Visitors of Apply**
  - Compares Group A visitors who applied verses Group B visitors who applied.
  - P-value is 0.000964782760072 (< 0.05), which produces statistical significance.
- **Hypothesis Test 2: Percent of Applicants with Memberships**
  - Compares Group A applicants with memberships verses Group B applicants with memberships.
  - P-value is 0.432586460511 (> 0.05), which does not produce statistical significance.
- **Hypothesis Test 3: Percent of Visitors with Memberships**
  - Compares Group A visitors with memberships verses Group B visitors with memberships.
  - P-value is 0.0147241146458 (< 0.05), which produces statistical significance.

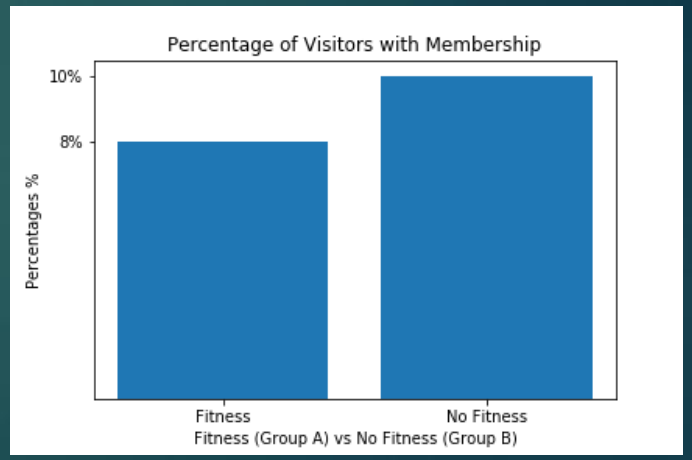
Hypothesis Results (cont.)

The third step is to summarize the data and determine if visitors, who didn't complete a fitness test, will purchase a membership.

- Hypothesis Test 1: Percent of Visitors who Apply
  - Group B has 13% of the total Applications submitted. This tells us that Group B felt more comfortable submitting an Application without being overwhelmed by a Fitness test.
- Hypothesis Test 2: Percent of Applicants with Memberships
  - Didn't produce statistical significance; test should not be used for recommendation.
- Hypothesis Test 3: Percent of Visitors with Memberships
  - Group B has 10% of the Total members that have not taken a Fitness test. This tell us that Group B will still purchase a membership even though they did not take a fitness test.







Qualitative Data Summary

- 4 gym visitors provided interviews
- 3 out of the 4 are not a fan of fitness tests
  - These interviews are consistent with the results produced from the “Percent of Visitors with Memberships” hypothesis test.

“I took the MuscleHub fitness test because my coworker Laura recommended it. Regretted it.

- Sonny "Dad Bod", 26, Brooklyn

Recommendation

When we only considered visitors who had already picked up an application, we see that there was no significant difference in membership between Group A and Group B.

And when we consider all people who visit MuscleHub, we see that there is a significant difference in memberships between Group A and Group B.

- Recommendation for MuscleHub:
  - Janet's hypothesis is that visitors assigned to Group B will be more likely to eventually purchase a membership to MuscleHub. And she is correct.
  - I recommend that Janet no longer require a fitness test and can confirm that MuscleHub will not see a loss in membership by removing this step in the process.