

MUSCLEHUB A/B TEST

INTRO TO DATA ANALYSIS – CAPSTONE

ZACHARY PECK

OUTLINE

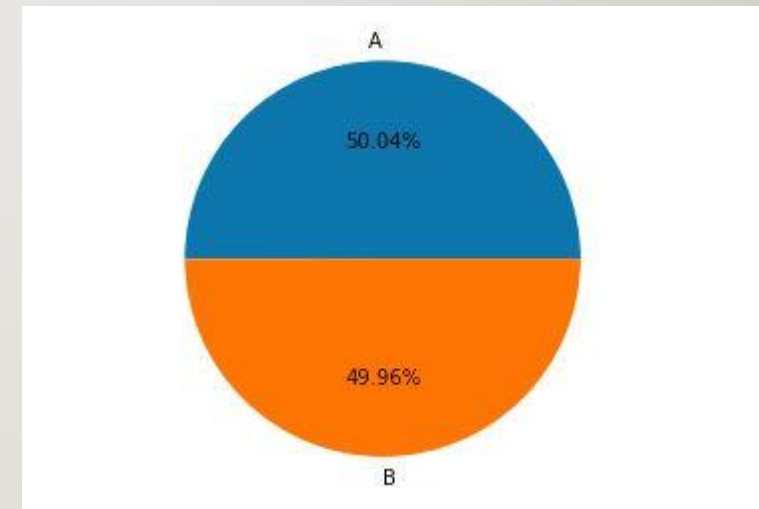
- The Experiment
- Experiment Design & Hypothesis
- Our Dataset
- Hypothesis Tests
- Quantitative Conclusion
- Qualitative Data
- Final Remarks & Recommendation

THE PROBLEM AT HAND

Janet, the manager of MuscleHub, believes that the mandatory fitness test intimidates some prospective members.

EXPERIMENT DESIGN & HYPOTHESIS

- Janet has set up an A/B Test to gather empirical data to gain insight on this.
 - Group A will still be asked to take the fitness test with a personal trainer
 - Group B will skip the fitness test and proceed directly to the application
- Janet's hypothesis is that visitors assigned to Group B will be more likely to eventually purchase a membership to MuscleHub



Above pie chart shows the percentage of visitors in each Group. Total visitors during this experiment was 5004.

OUR DATASET

Data was collected and stored in a SQL database with the following tables:

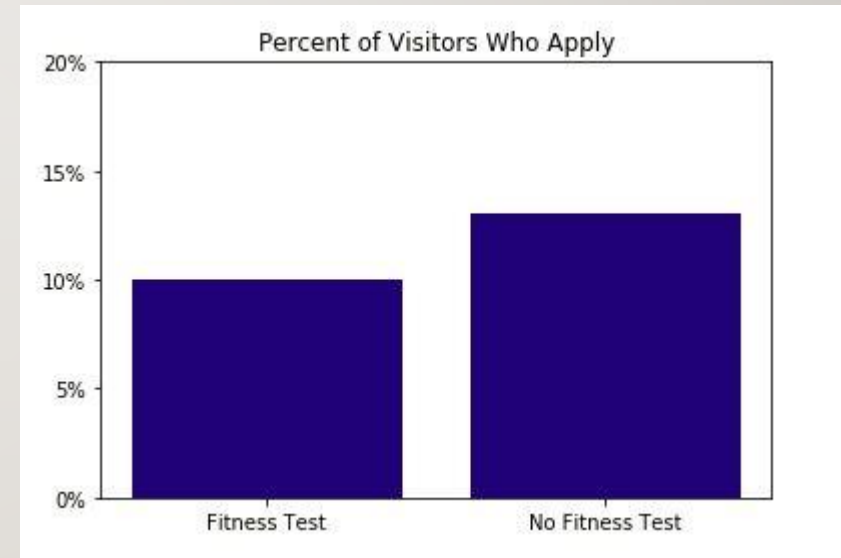
- 'visits' contains information about potential gym customers who have visited MuscleHub
- 'fitness_tests' contains information about potential customers in "Group A", who were given a fitness test
- 'applications' contains information about any potential customers (both "Group A" and "Group B") who filled out an application. Not everyone in visits will have filled out an application.
- 'purchases' contains information about customers who purchased a membership to MuscleHub.

HYPOTHESIS TESTING

- Three different tests were conducted to test Janet's hypothesis
 - Who picks up an application?
 - Which applicants purchase a membership?
 - Which visitors purchase a membership?
- All tests were conducted using Chi Square test.

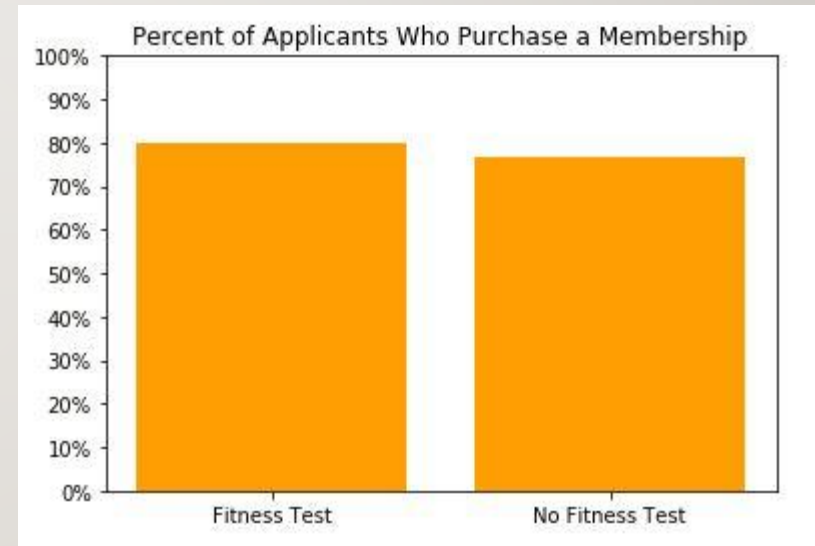
WHO PICKS UP AN APPLICATION?

- Group A
 - 2504 visitors
 - 250 (10%) picked up an application
- Group B
 - 2500 visitors
 - 324 (13%) picked up an application
- P-value was 0.0009 and therefore statistically significant



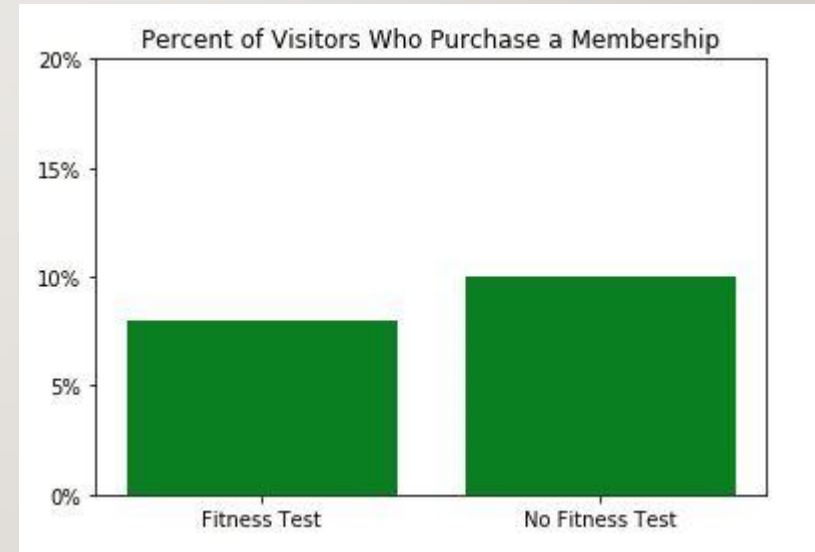
WHICH APPLICANTS PURCHASE A MEMBERSHIP?

- Group A
 - 250 total applicants
 - 200 (80%) purchased a membership
- Group B
 - 325 total applicants
 - 250 (77%) purchased a membership
- P-value was 0.4326 and therefore statistically insignificant



WHICH VISITORS PURCHASE A MEMBERSHIP?

- Group A
 - 2504 visitors
 - 200 (8%) purchased a membership
- Group B
 - 2500 visitors
 - 250 (10%) purchased a membership
- P-value was 0.0147 and therefore statistically significant



QUANTITATIVE CONCLUSION

Janet's hypothesis was supported.

Individuals assigned to Group B were more likely to apply and eventually become members at MuscleHub than those assigned to Group A

QUALITATIVE DATA

- Interviews were conducted with a small subset of individuals (4)
- As expected, the individuals interviewed had mixed reviews of the fitness test
- I took the MuscleHub fitness test because my coworker Laura recommended it. Regretted it.
 - Sonny "Dad Bod", 26, Brooklyn
- I always wanted to work out like all of the shredded people on the fitness accounts I see on Instagram, but I never really knew how to start. 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!
 - Cora, 23, Hoboken

FINAL REMARKS & RECOMMENDATION

- Based on the results of the three hypothesis tests, I would recommend that Janet removes the mandatory fitness tests as part of the sign up process.
- One of the four interviews showed that some people may still find value in the fitness tests and because of this Janet should still offer the fitness test as an optional step in the sign up process