

# Muschlehup A/B Test

Intro to data analysis

Section June 19, 2018

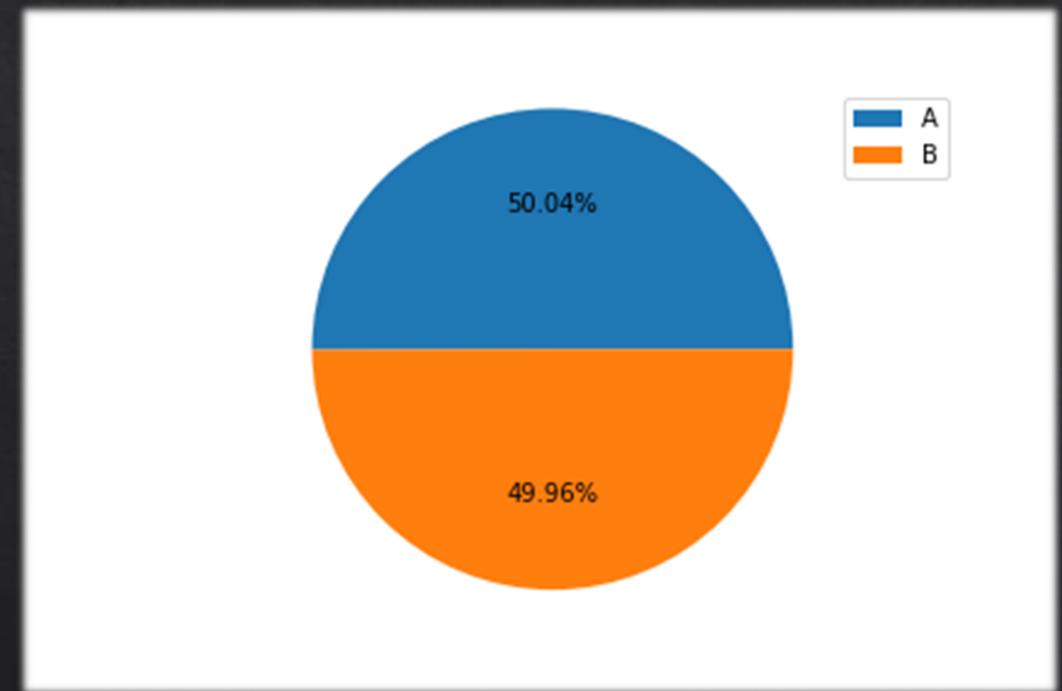
Jon Scoresby

# A/B Test Introduction

- ❖ Potential applicants would visit the gym and possibly apply for membership.
- ❖ There are two pathways to the application process.
- ❖ Potential applications are categorized by the application process pathway they experienced.
- ❖ Group A:
  - ❖ Take a fitness test with a personal trainer
  - ❖ Fill out an application for the gym
  - ❖ Gain membership
- ❖ Group B:
  - ❖ Skips the fitness test fills out the application for gym membership
  - ❖ Gain membership

# Dataset Summary

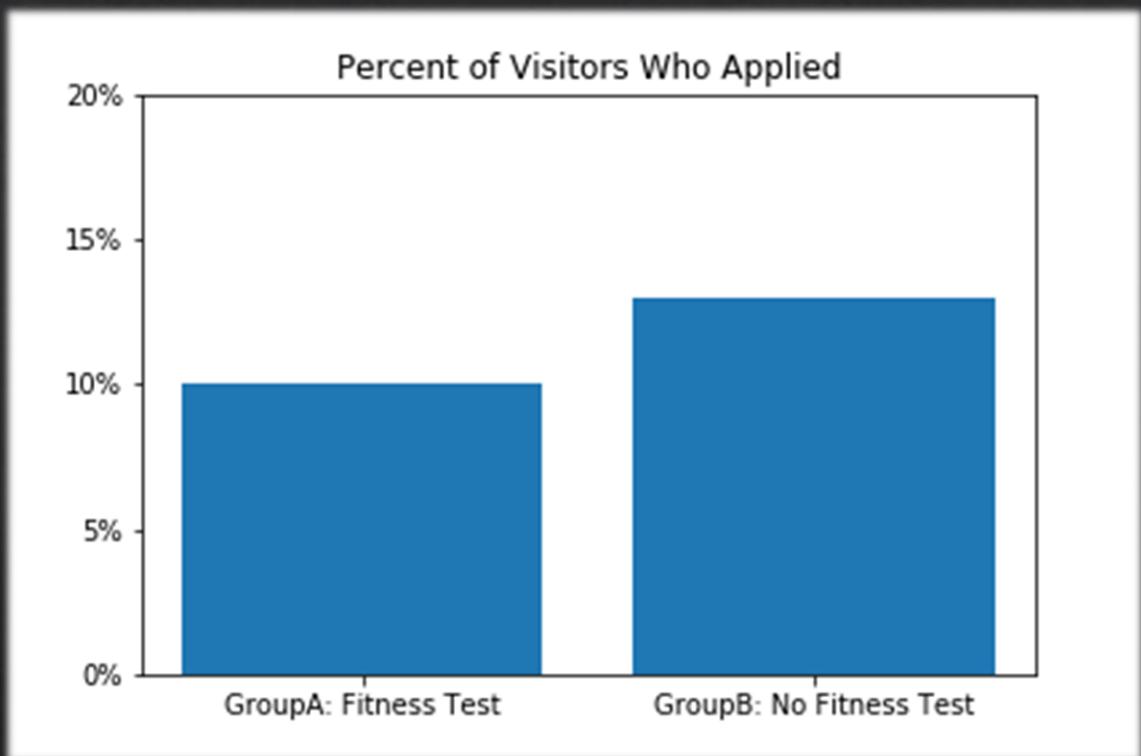
- ❖ Total Applicants: 5004
- ❖ Group A: 50.04%
- ❖ Group B: 49.96%



Group	# of visitor	Fitness Test	Application	Member
A	2504	2504	250	200
B	2500	0	325	250

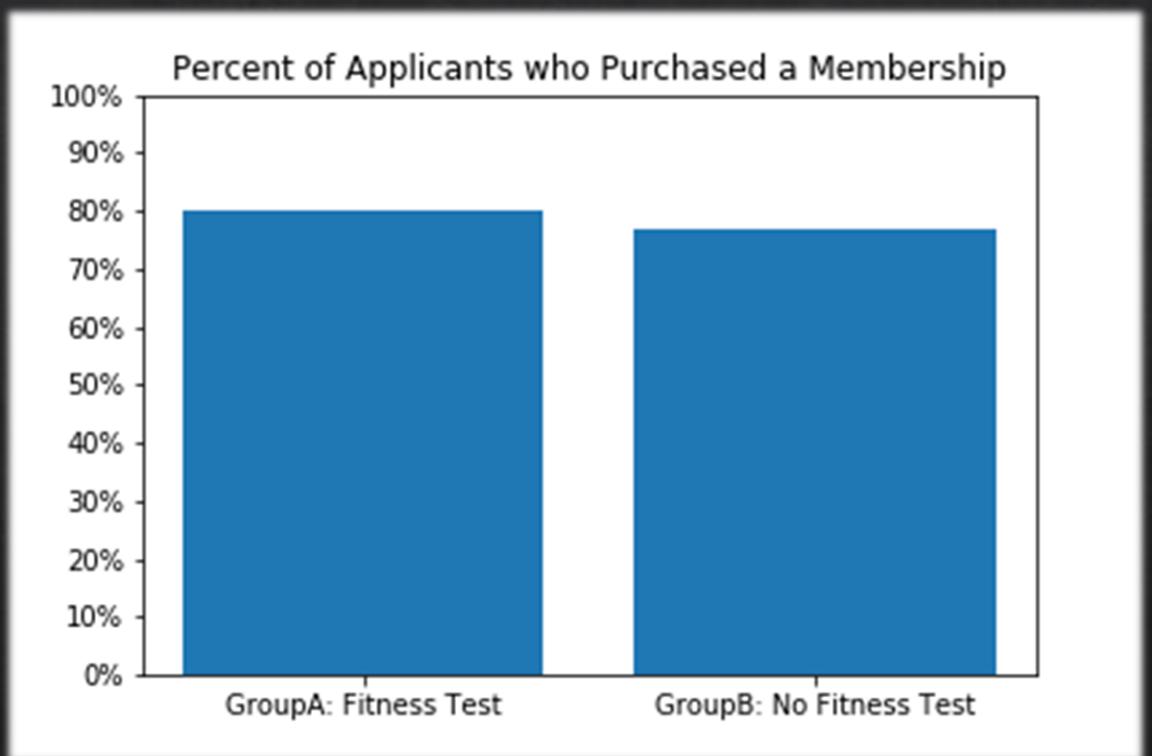
# Datasets Summary cont.

- ❖ Total Applicants: 5004
- ❖ Group A: 10% took an application
- ❖ Group B: 13% took an application



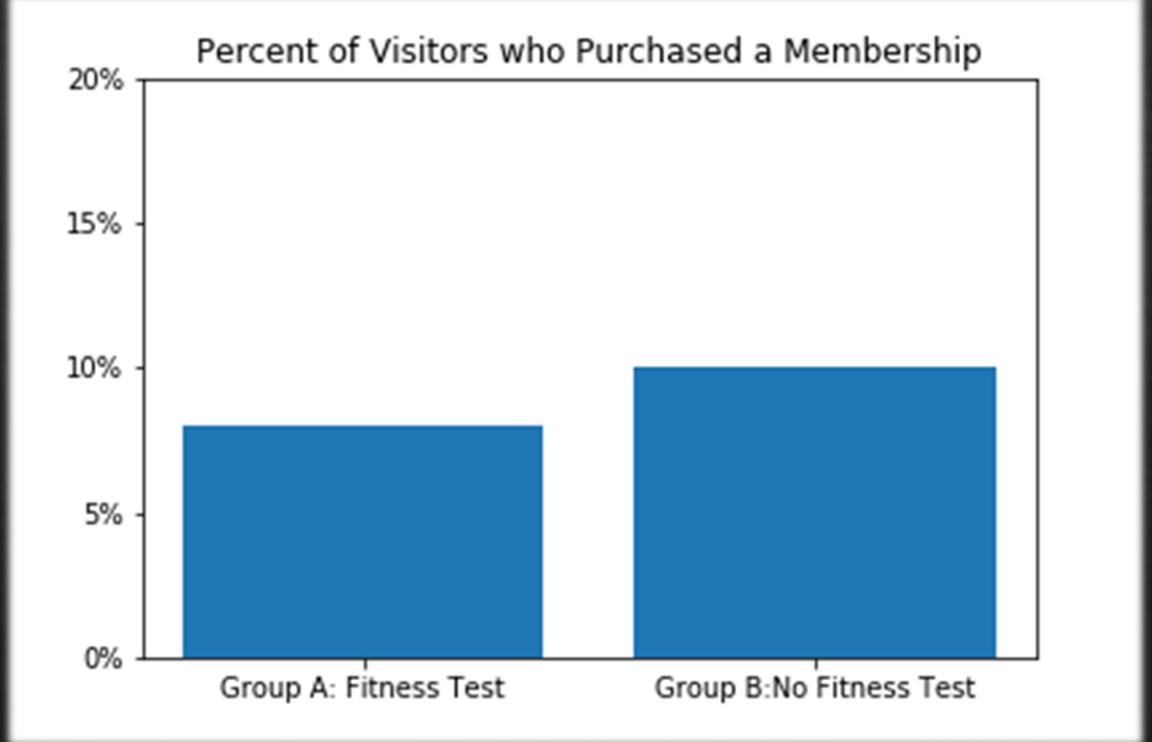
# Datasets Summary cont.

- ❖ Total Applicants: 5004
- ❖ Group A:
  - ❖ Of those that took an application, 80% purchase membership
- ❖ Group B:
  - ❖ Of those that took an application, 76.9% purchased membership



# Datasets Summary cont.

- ❖ Total Applicants: 5004
- ❖ Group A:
  - ❖ Overall purchase rate is 8%
- ❖ Group B:
  - ❖ Overall purchase rate is 10%



# Qualitative Data

- ❖ We are not able to conclude that the fitness test was the reason why people didn't purchase the membership
- ❖ The fitness test was viewed as difficult and challenging
- ❖ Fitness tests could make it difficult to sell the idea of membership
- ❖ Those who didn't take the fitness test were more comfortable in applying for membership

# Hypothesis Test

- ❖ The hypothesis is that visitors in Group B will be more likely to eventually purchase a membership to MuscleHub.
  - ❖  $\alpha = .05$
  - ❖ Sample size: 5004
  - ❖ Chi Square Model to test for significance

# Data Analysis Results 1

- ❖ Null-Hypothesis
  - ❖ The number of visitors who fill out the application after taking a fitness test is NOT significantly different from the number of visitors who fill out an application with not taking the fitness test. Therefore, we reject the null.
  - ❖  $.000964 < .05$  rejected
- ❖ Alternative Hypothesis
  - ❖ The number of visitors who fill out the application after taking a fitness test is significantly different from the number of visitors who fill out the application without a fitness test.

# Data Analysis Results 2

- ❖ Null-Hypothesis
  - ❖ The number of memberships after filling out the application form in group A has NO significant difference against the number of memberships after filling out the application form in group B.
  - ❖  $.4325 > .05$  accepted
- ❖ Alternative Hypothesis
  - ❖ The number of memberships after filling out the application form in group A IS significantly different against the number of memberships after filling out the application form in group B.

# Data Analysis Results 3

- ❖ Null-Hypothesis
  - ❖ The number of visitors paying for membership after taking a fitness test has NO significant difference against the number of visitors paying for their membership without a fitness test
  - ❖  $.0147 < .05$  reject
- ❖ Alternative hypothesis
  - ❖ The number of visitors who pay for their members after taking a fitness test HAS significant difference against the amount of visitors paying for their memberships without a fitness test.

# Recommendations

- ❖ Because the fitness test has an impact on the number of memberships sold, it is suggested to make the fitness test an option for visitors instead of part of the application process. Some visitors may enjoy the experience and like the idea of knowing what they are getting themselves into.