Would Fitness Test Increase Membership Purchase?

--MusleHub A/B Test Analysis

Visitors are divided into two groups for A/B Test

The manager’s hypothesis is that visitors assigned to Group B will be more likely to eventually purchase a membership to MuscleHub.

Group A

- Take a fitness test with a personal trainer
- Fill out an application for the gym
- Send in their payment for their first month's membership

Group B

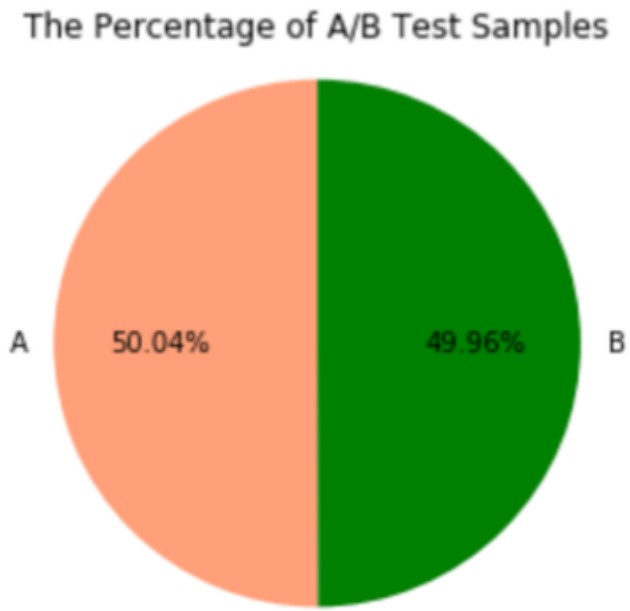
- Fill out an application for the gym
- Send in their payment for their first month's membership

Summary of Dataset

MuscleHub has a SQLite database containing the information tables of visitors, fitness testers, applicants and membership buyers. The tables have common columns for visitors personal information, so the dataset for A/B test could be obtained by JOIN function. The two test groups almost have equal sample size.

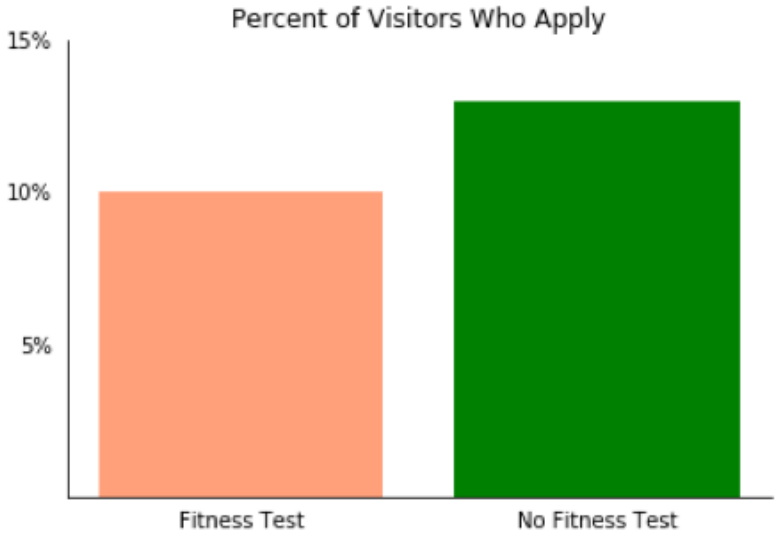
Total 5004 visitors are included in the test. A few rows of the dataset is shown as below.

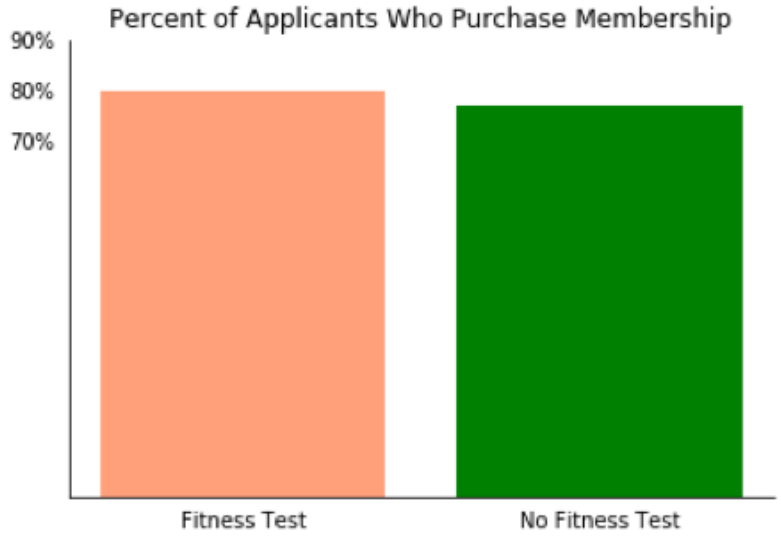
	first_name	last_name	visit_date	fitness_test_date	application_date	purchase_date	ab_test_group
0	Kim	Walter	7-1-17	2017-07-03	None	None	A
1	Tom	Webster	7-1-17	2017-07-02	None	None	A
2	Edward	Bowen	7-1-17	None	2017-07-04	2017-07-04	B
3	Marcus	Bauer	7-1-17	2017-07-01	2017-07-03	2017-07-05	A
4	Roberta	Best	7-1-17	2017-07-02	None	None	A

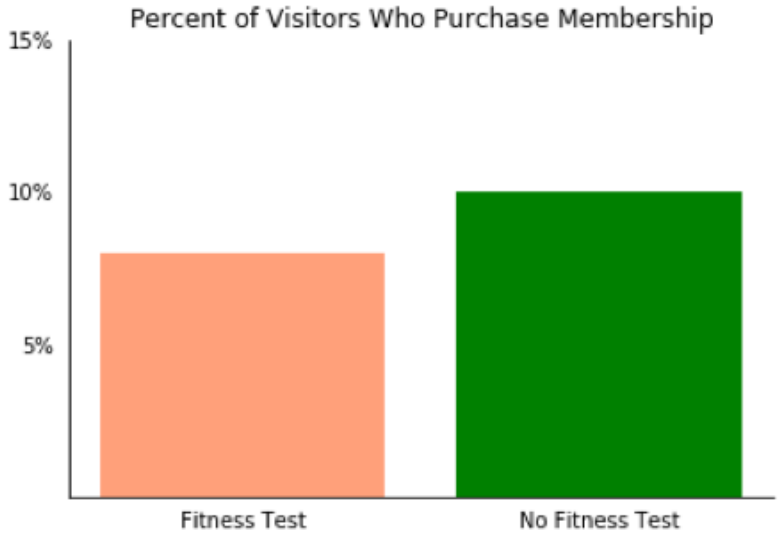


Visitors Without Fitness Test Are More Likely to Purchase Membership

The A/B test shows the visitors without fitness test are more likely to purchase MuscleHub's membership as they are more likely to fill the application form.







Group A	10.0%	Group A	80.0%	Group A	8.0%
Group B	**13.0%**	Group B	76.9%	Group B	**10.0%**

Note: As the data is categorical with 2 samples, so Chi Square test is used in the A/B test to determine whether there is a significant difference between the two frequencies.

Recommendation

1. MuscleHub could let visitors skip the fitness test and proceed them directly to the application to increase the purchase rate.
2. MuscleHub could get more interaction with visitors for getting their feedback on fitness test experience. A few visitors had bad experience for fitness test. Collecting their feedback and implement improvements on fitness test experience is possible to bring positive outcome for MuscleHub. Another A/B test could be conducted after that.