MuscleHub
The right way to ensure a membership

Step Two: Description of what happened in this A/B test

The A/B test has the purpose to demonstrate if the fitness test is a positive or a negative way to start the MuscleHub enrollment process. The A/B test has been done base on four different data frames provided by MuscleHub which contains information related to each client process of enrollment. It is important to recall the MuscleHub membership process.

- Take or not a fitness test with a personal trainer
- Fill out an application for the gym
- Send in their payment for their first month's membership

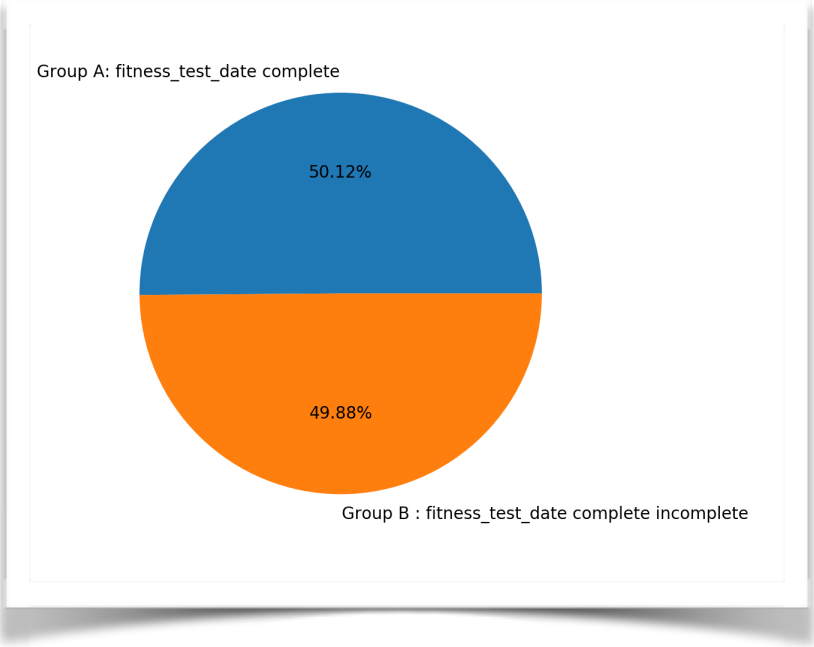
The A/B test selected visitors randomly to one of two groups:

- Group A took the fitness test.
- Group B skipped the fitness test and proceed directly to the application

Graphic number one shows a very equal number of people who participate in both groups of the A/B test. This will assure a high level of confidence in the results of the test. Join the four data frames in a correct manner has provided a complete data set named "df" were the information is compacted in it.

The second A/B test was based in a data frame called just_apps, restricted for the people who complete the application. Despite the data frame has biased data, the second A/B test shows an important relation between the Fitness / No Fitness Test and the membership enrollment in which it could appear that there is no difference between the two groups.

Graphic 1 : Pie chart. People percentage in each A/B group



Step Three: A dataset summary

Table One: Percent of people in each group who complete an application in data frame “df”

is_application	ab_test_group	Application	No_Application	Total	Percent_with_Application
0	A	250	2254	2504	9.984026
1	B	325	2175	2500	13.000000

P-Value = 0.000964782760072

Table Two: Percent of people in each group who purchase a membership in data frame “just_apps”

is_member	ab_test_group	Member	Not_Member	Total	Percent_Purchase
0	A	200	50	250	80.000000
1	B	250	75	325	76.923077

P-Value = 0.432586460511

Table Three: Percent of people in each group who purchase a membership in data frame “df”.

is_member	ab_test_group	Member	Not_Member	Total	Percent_Purchase
0	A	200	2304	2504	7.98722
1	B	250	2250	2500	10.00000

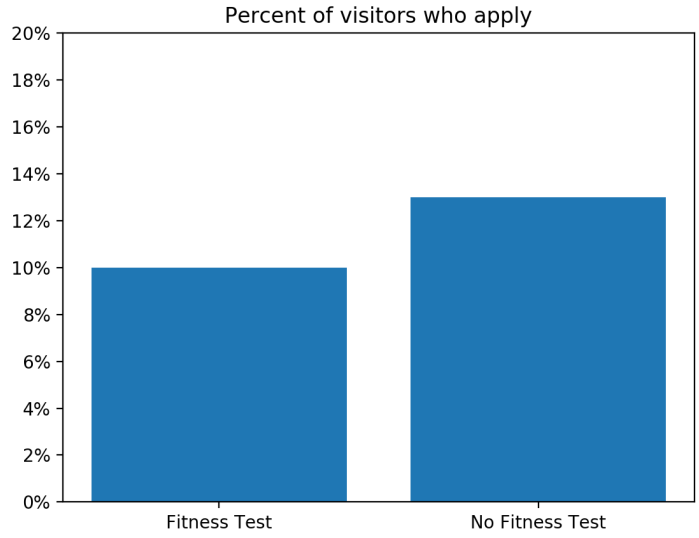
P-Value = 0.0147241146458

Step Four:The three hypothesis tests results.

- MuscleHub conditions to the A/B tests require selected data in a categorical way. The experiment has two categories and one probable outcome so the obvious hypothesis test to chose is the Chi Square which provides the necessary tools to analyze the relation of the Fitness / No fitness test with the membership process.
- In this case the null hypothesis, would be that there is no differences between the visitors who had a Fitness test and those who didn't. The null hypothesis will be rejected if the p-values is less than 0.05.

1. First A/B test: Percent of people in each group who complete an application in df

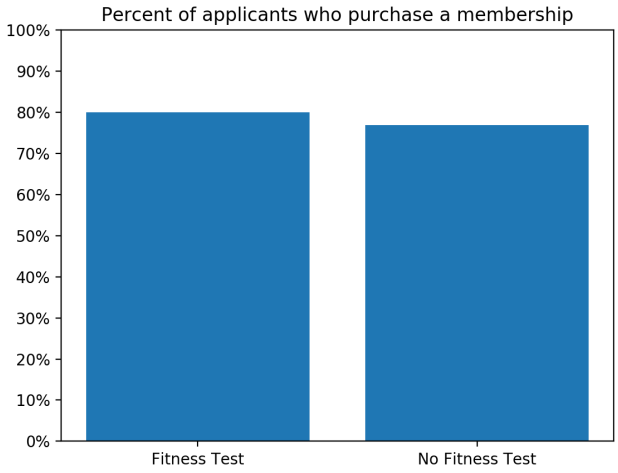
Graphic 2 : Bar chart Visit to Application A/B group percentage



The first Chi Square hypothesis test has a p-val of "0.000964782760072" which is quite less than 0.05. With this type of result the null-hypothesis is confidently rejected and it is wise to state that there is a significan difference in the relation between the Fitness / No Fitness test and the visitors who complete the application process.

2. Second A/B test: Percent of people in each group who purchase a membership in just_apps

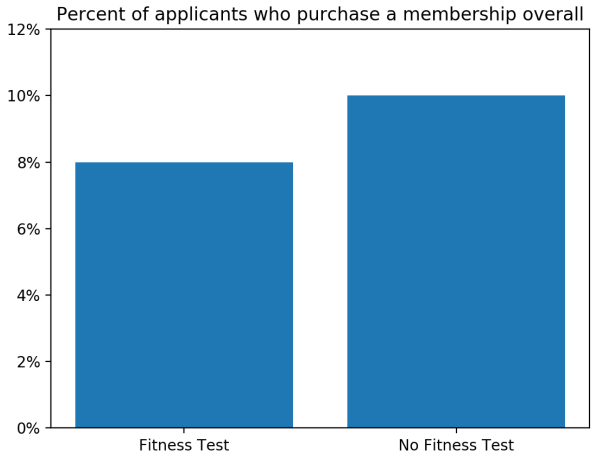
Graphic 3 : Bar chart Application to Membership A/B group percentage



The second A/B test data ,which are contained in the just_apps data frame, is restricted to those who completed the application process despite they take or not the fitness test. Since that point, the test had the propose to determine if there is a relation between both groups and the membership acquirement. From this stage in the process, it seems that the null-hypothesis can't be rejected thus the p-value for the Chi Square hypothesis tests is "0.432586460511" which is higher than "0.05". Even tho the percentage of people who took the fitness test and buy a membership is higher.

3. Percent of people in each group who purchase a membership in df

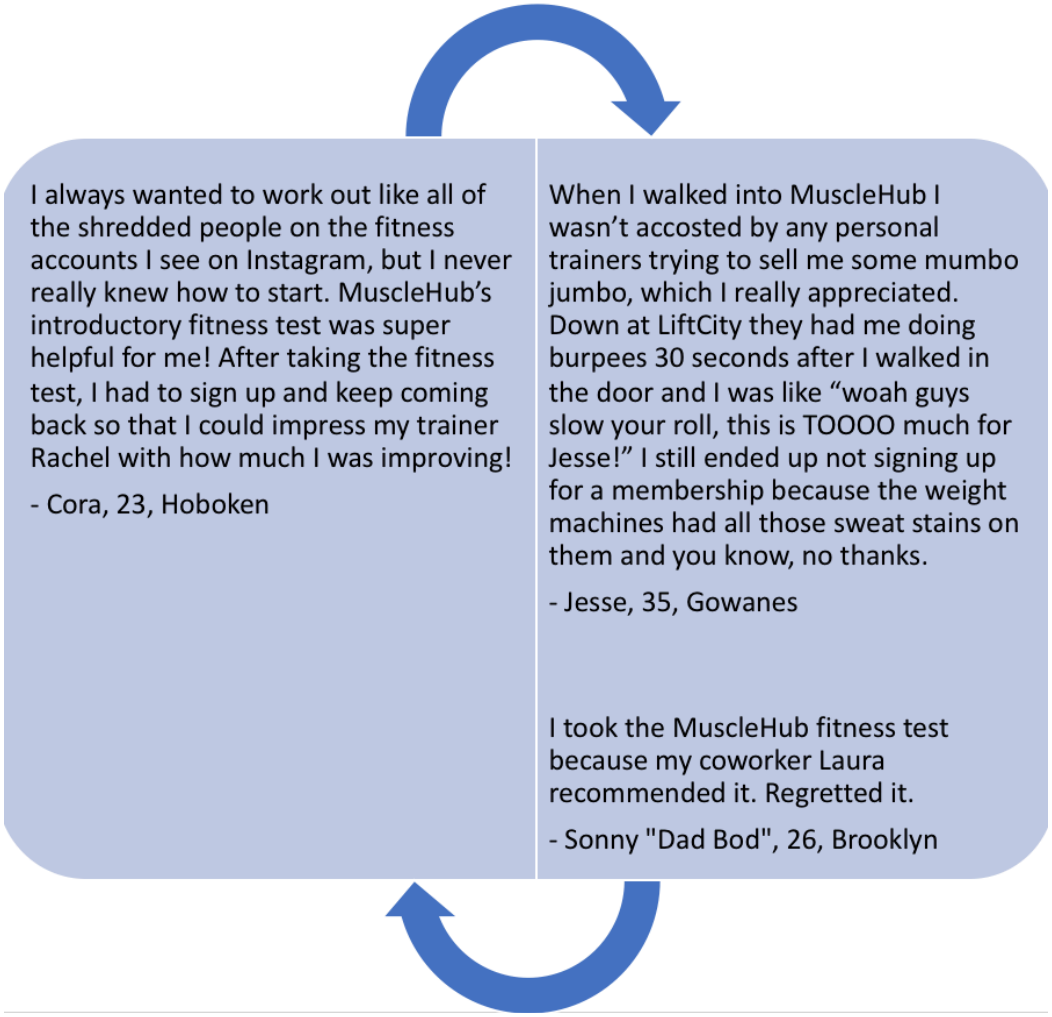
Graphic 4 : Bar chart Visit to Membership A/B group percentage



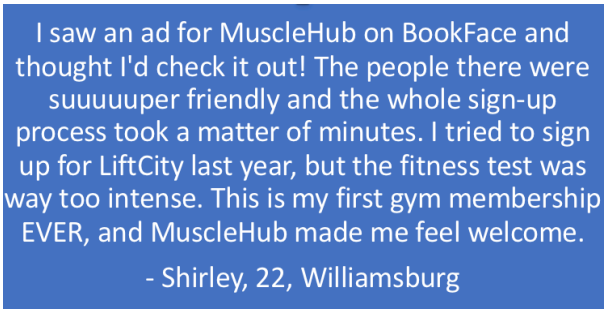
In the last A/B test, the tested data contain all the information from the original data frame "df" to find out if there is a significan difference between the two MuscleHub inscription methods, and the the final outcome, which in this case is the membership purchase. The results indicate a direct correlation between the visitors who took the fitness test and those who actually reach the final inscription step, as well as those who didn't take the fitness test and those who purchase a membership. The p-value (0.0147241146458) from this test is determining parameter that allow us to state that the fitness test is having a negative effect on the people who are seeking to become a member of MuscleHub

Step Five: A summary of the qualitative data.

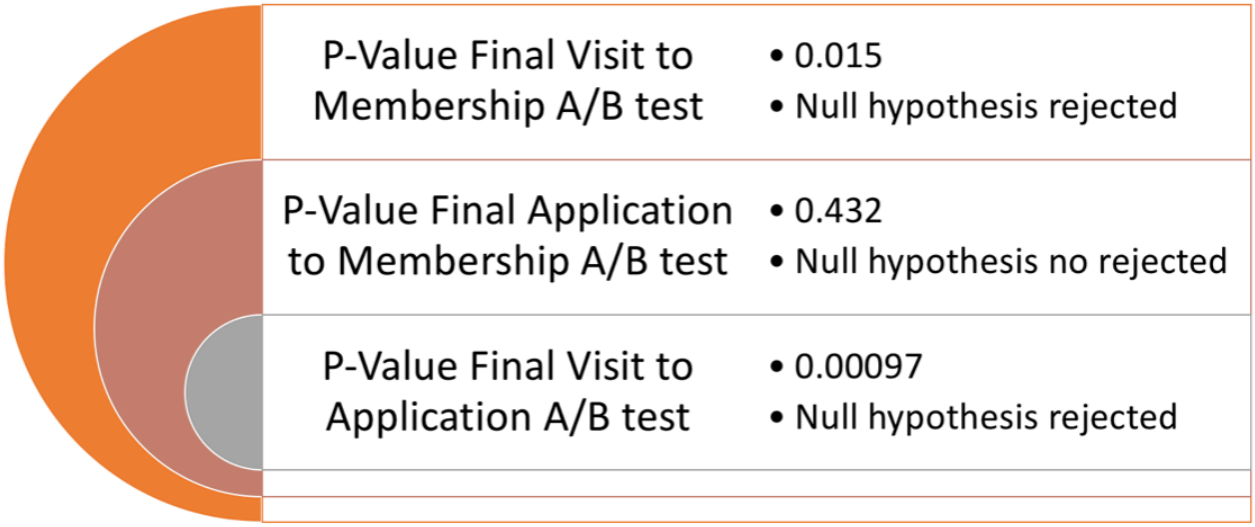
Graphic 5 : Fitness Test Positive reviews VS Negative reviews



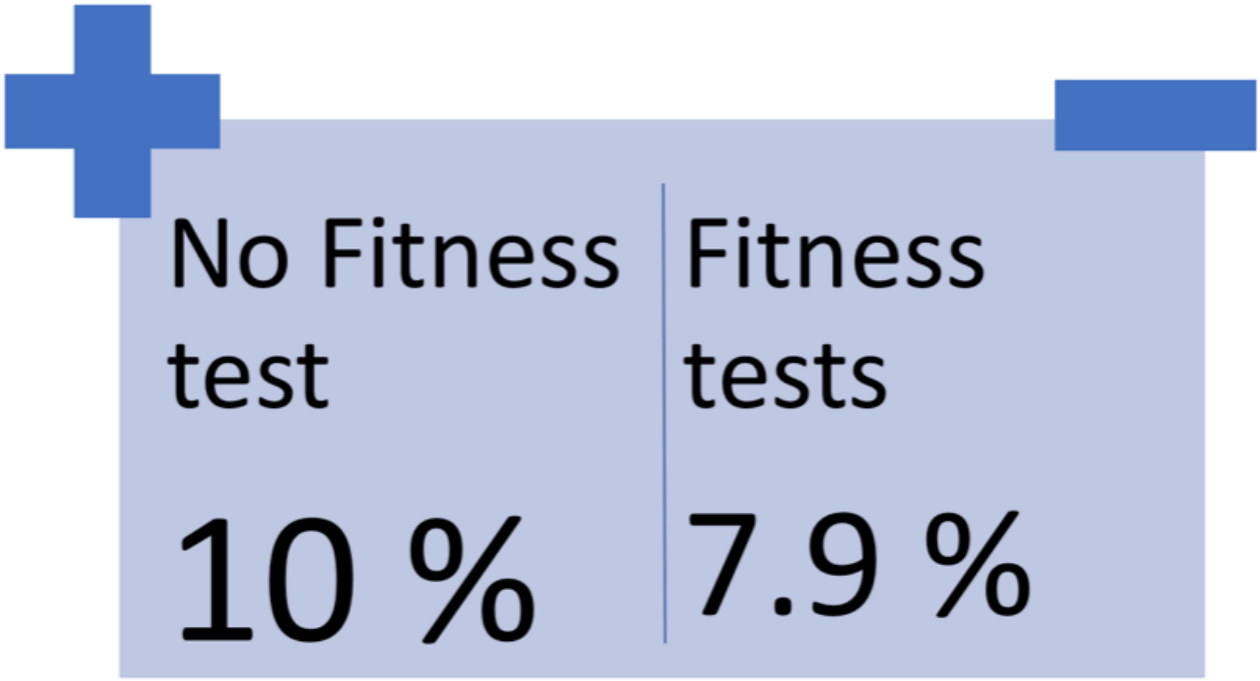
Graphic 6: Neutral review



Graphic 7 : A/B tests results



Graphic 8: A/B test: Percent of people who purchase a membership in each group



Step Six: A recommendation for MuscleHub

Taking into account the tests results it would be an effective strategy to move the fitness test into an optional requirement after the membership is purchased. The optional fitness test could be for some specific programs available at MuscleHub, leaving other programs free from the fitness test which could be a right place to star for beginners.
By doing this MuscleHub will increase the amount of people who register to become a member and filter the people who are seeking for a more advance program from those who are jus