MUSLEHUB PROJECT

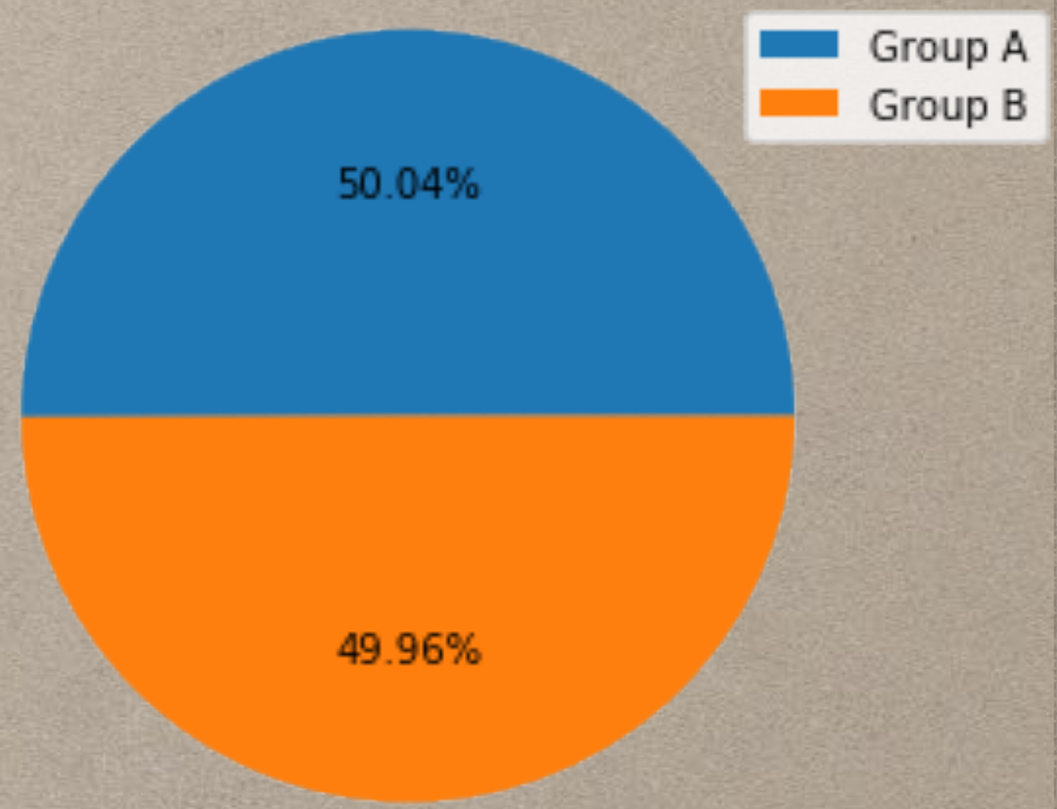
AN A/B TEST FOR MUSLEHUB MEMBERSHIP REGISTRATION PROCESS

WHY ARE WE DOING THIS?

Currently in MusleHub, you have to do a fitness test before you fill an application form and make payment to become a official member. We are now considering the necessity of the fitness test because we believe it intimates some prospective customers. Therefore, we set up an A/B test to see whether we could get more members if we skip the fitness test.

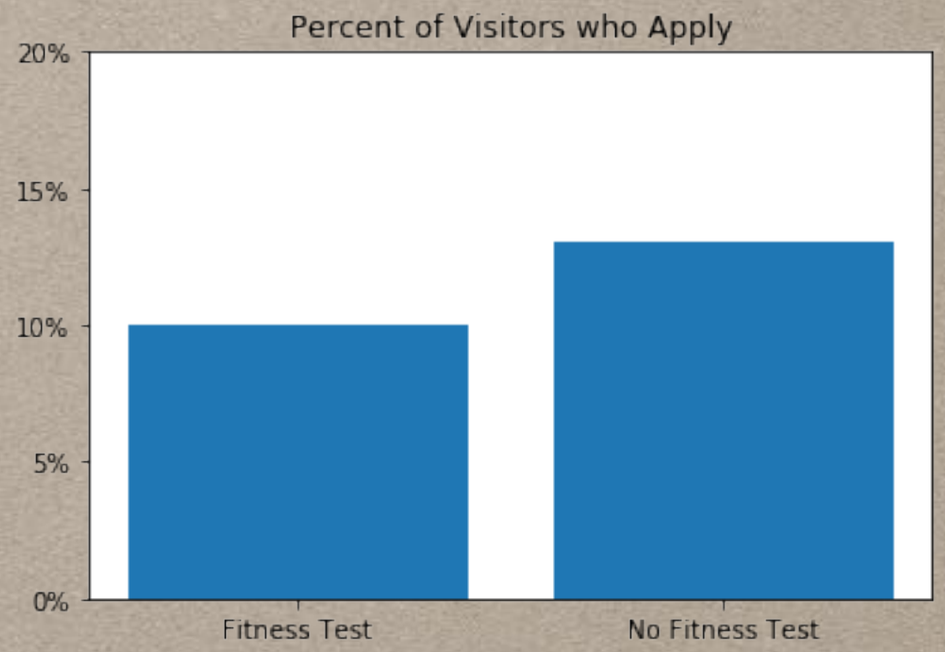
GROUP A VS GROUP B

- Visitors will be randomly assigned to one of two groups:
  - Group A will still be asked to do a fitness test with a personal trainer
  - Group B will skip the fitness test and directly proceed to the application
- Totally 5004 visitors has been evenly assigned to the two groups



WHO PICKS UP AN APPLICATION?

- **Group A:** 250 out of 2504 visitors with percent of application 9.984%
- **Group B:** 325 out of 2500 visitors with percent of application 13%



HYPOTHESIS TEST

- The next step is to see whether the difference between the two groups is significantly different to each other. We can achieve it by doing hypothesis test, which is a mathematical way of determining whether we can be confident that the null hypothesis is false.

- In the case of MusleHub, we have two groups datasets to compare. Therefore the best method here is **Chi Square** test.

- **P-Value** is a numerical answer which is provided by hypothesis test to determine the validity of a null hypothesis. Normally, the threshold is 0.05. If p-value from a test is less than 0.05, then it means that there is less than 5% chance that the results are due to random chance. In other words, the results from different groups are significantly different.

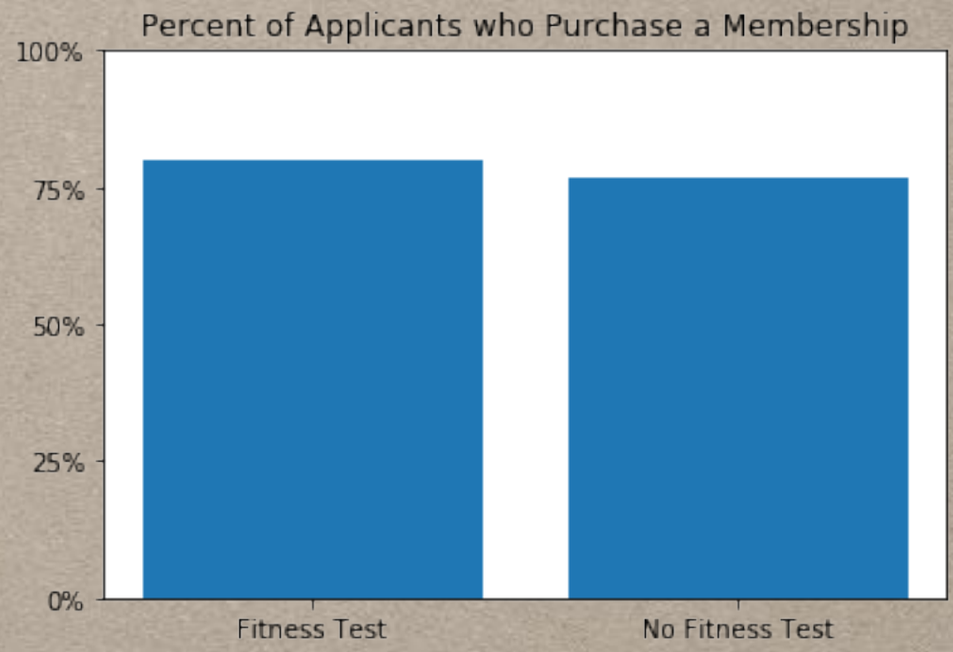
SIGNIFICANTLY DIFFERENT?

- It seems more applications from Group B. But is this the fact or just happened by chance? To answer the question, we need to do a **chi-square** test to approve the results from the two groups are statistically significantly different to each other.

- P-value is 0.00096478 < 0.05, which means that we can **reject** the hypothesis that the results are not significantly different.

WHICH GROUP'S APPLICANTS BUY MORE MEMBERSHIP?

- Group A: 200 out of 250 people with percent of purchase 80%
- Grop B: 250 out of 325 people with percent of purchase 76.9231%

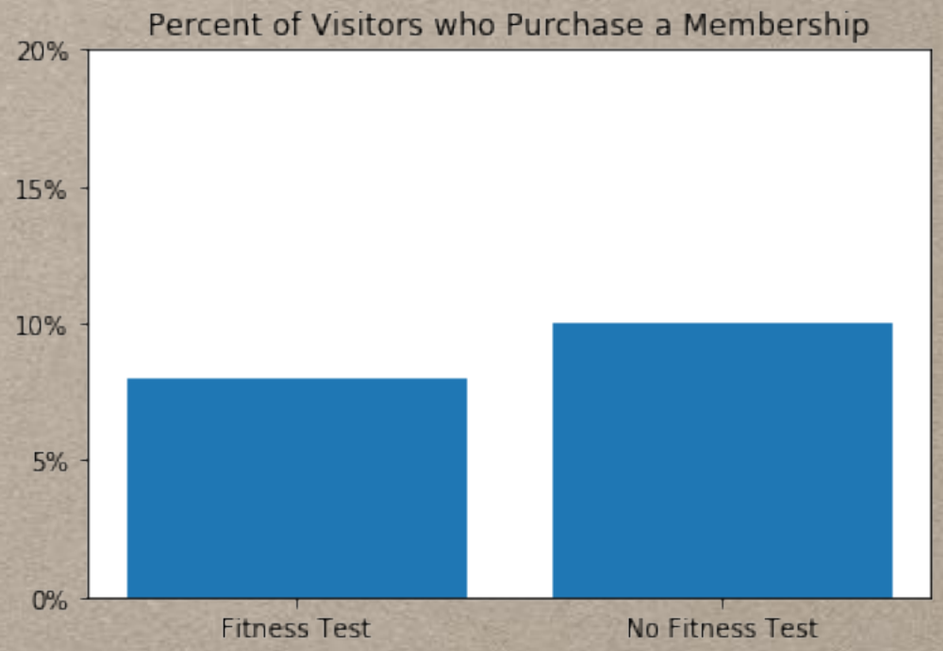


SIGNIFICANTLY DIFFERENT?

- It looks like people who took fitness test were likely to purchase a membership if they picked up an application form.
- But P-value of Chi-square test is 0.43258646 > 0.05. We cannot reject the null hypothesis. Therefore, the application-to-membership rates for the two group is not statistically significantly different to each other.

WHICH GROUP'S VISITORS BUY MORE MEMBERSHIP?

- Group A: 200 out of 2504 people with percent of purchase 7.99%
- Grop B: 250 out of 2500 people with percent of purchase 10%



AGAIN, SIGNIFICANT DIFFERENT?

- It turns out that visitors who skip fitness test would more likely become a member.
- P-value is 0.01472411 < 0.05, which means that we can **reject** the hypothesis that the results are not significantly different.

SUMMARY OF TESTS

	Visitors to Applicants	Applicants to Members	Visitors to Members
Group A: with Fitness test	9.98%	80%	7.99%
Goup B: without Fitness test	13%	76.92%	10%
Reject the Null Hypothesis?	Yes	No	Yes

RECOMMENDATION FOR MULSEHUB

- From the results of the tests, we would definitely recommend MulseHub to skip the fitness test for visitors. It will attract more applicants and ultimately more purchases of membership.