

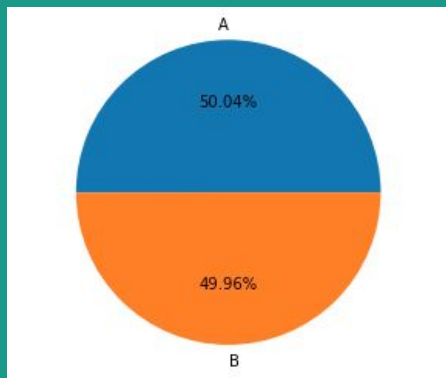


# Capstone Project: Muscle Hub A/B Test

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- In this project, we have been hired to help MuscleHub, a fancy gym, run an A/B test.
- MuscleHub is looking to figure out the most effective way to get their visitors to sign up!
- They wanted to implement an A/B test to test between two different methods
  - Test A = the visitors will be asked to take a fitness test with a personal trainer
  - Test B = the visitors will skip the fitness test and proceed directly to the application
- The manager, Janet, hypothesizes that more visitors will sign up and purchase a membership at MuscleHub from Test B



	ab_test_group	first_name
0	A	2504
1	B	2500



# The Data

1

The data provided included all the visitors that came to the gym;

2

whether they did a fitness test;

3

if they received an application;

4

and if they purchased a membership

is_application	ab_test_group	Application	No Application	Total	Percent with Application
0	A	250	2254	2504	0.09984
1	B	325	2175	2500	0.13000



## Visitors who pick up an application

- The process of picking up an application involves:
  - 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
- The below table shows the number of visitors who pick up an application at MuscleHub

is_application	ab_test_group	Application	No Application	Total	Percent with Application
0	A	250	2254	2504	0.09984
1	B	325	2175	2500	0.13000



## Visitors who pick up an application, and purchase a membership

- From the people that picked up an application, we can see that visitors that took a fitness test were more likely to purchase a membership if they picked up an application
- 80% of visitors who picked up an application and took a fitness test purchased a membership
- 76.9% of visitors who picked up an application but did NOT take a fitness test purchased a membership

is_member	ab_test_group	Member	Not Member	Total	Percent Purchase
0	A	200	50	250	0.800000
1	B	250	75	325	0.769231



## Visitors who pick up an application

- The below table looks at what percentage of ALL visitors purchased memberships, as opposed to the previous investigation of people who took the fitness test or not and whether they purchased a membership
- When we consider all visitors who visit MuscleHub, we can see that there might be a significant difference in memberships between Group A and Group B.

is_member	ab_test_group	Member	Not Member	Total	Percent Purchase
0	A	200	2304	2504	0.079872
1	B	250	2250	2500	0.100000



# Chi-Square Significance Test

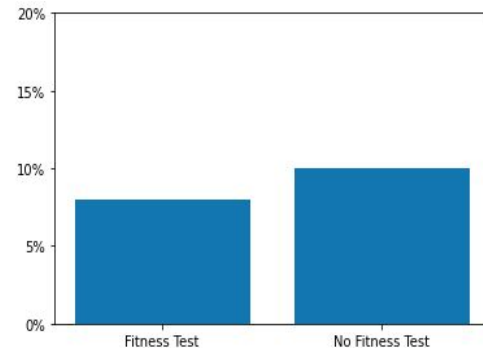
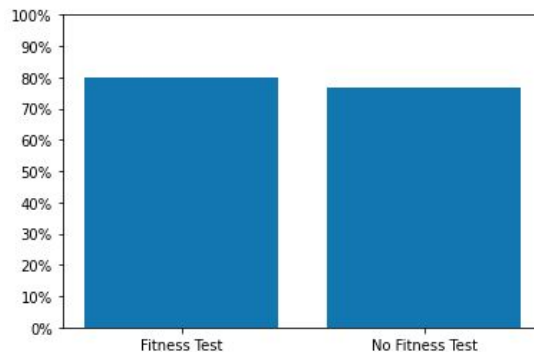
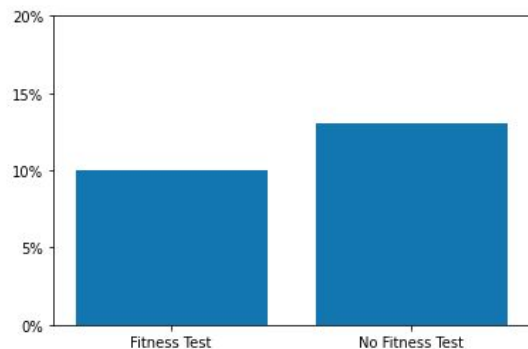
- With a p-value of 0.014725 which is  $< 0.05$ , we can conclude there is a significant difference.

```
contingency = [[200, 2304], [250, 2250]]  
chi2_contingency(contingency)  
  
(5.949182292591156,  
 0.014724114645783203,  
 1,  
 array([[ 225.17985612, 2278.82014388],  
        [ 224.82014388, 2275.17985612]]))
```



# Summarizing the acquisition funnel with charts

From the below charts, we conclude that visitors who did not take Fitness Test (group B) were more likely to purchase a membership







# Thank you.

