



MuscleHub

Analysis of membership purchases after fitness test

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Analyzing Data with Python Capstone Project - Codecademy

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A/B test

A/B test

Goal: Determine if the fitness test prior to the gym application intimidates prospective members.

Random assignment of visitors to one of two groups:

- Group A was still asked to **take a fitness test** with a personal trainer
- Group B **skipped the fitness test** and proceeded directly to the application

Null Hypothesis: There won't be a significant difference between the visitors in Group A and Group B that purchase a membership.

Alternate Hypothesis: There will be significantly more visitors in Group B that purchase membership than visitors in Group A who do so.

The significance threshold set as the benchmark to either accept or fail to reject the null hypothesis is: $p \text{ value} = 0.05$



A/B: Applications
between visitors

Hypothesis test 1:

Difference in applications between visitors (A/B)

Test group	Application	No application	Total	% of application
A	250	2254	2504	9.98%
B	325	2175	2500	13%

Null hypothesis is rejected *: There is a significant difference between the visitors in group A and group B that turned in an application.

Performed significance test in Python using the `chi2_contingency` function from `scipy.stats`

* p value = 0.00096 (< 0.05)



A/B: Purchases
between applicants

Hypothesis test 2:

Difference in purchases between applicants (A/B)

Test group	Members	Not members	Total	% of purchases
A	200	50	250	80%
B	250	75	325	76.92%

Null hypothesis is accepted *: There isn't a significant difference in the purchase of memberships between applicants in group A and group B

Performed significance test in Python using the `chi2_contingency` function from `scipy.stats`

* p value = 0.4325 (> 0.05)



A/B: Purchases
between visitors

Hypothesis test 3:

Difference in purchases between visitors (A/B)

Test group	Members	Not members	Total	% of purchases
A	200	2304	2504	7.99%
B	250	2250	2500	10%

Null hypothesis is rejected *: There is a significant difference in the purchase of memberships between visitors in group A and group B.

Performed significance test in Python using the `chi2_contingency` function from `scipy.stats`

* p value = 0.0147 (> 0.05)



Summary of interviews

Summary of interviews

Key takeaways *:

- **Positive:** Super helpful, motivating, the personal trainers' approach was well-received, friendly people, quick sign-up process, felt welcome
- **Negative:** Regretted taking the test, sweat stains on the weight machines

* based on 4 interviews regarding the introductory fitness test, conducted to MuscleHub visitors.



Recommendations

Recommendations

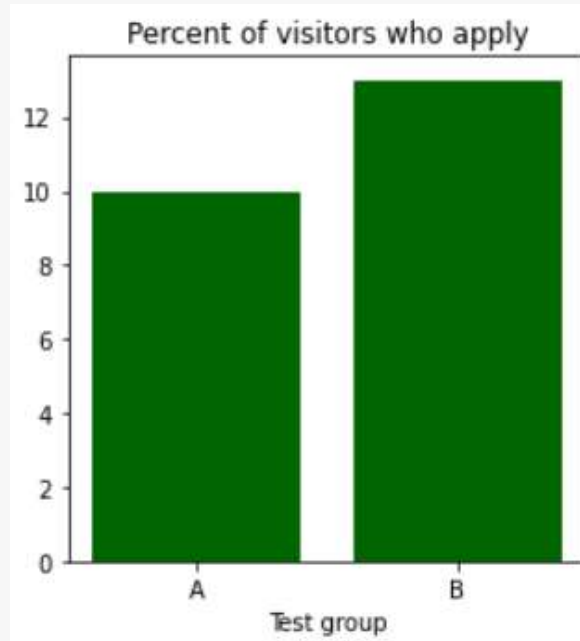
Based on the hypothesis tests and interviews conducted, we recommend to:

- **Remove the fitness test** from the application process, in order to make the process quicker and less intimidating for prospective members.
- Encourage the personal trainers' to keep their friendly and motivating approach.

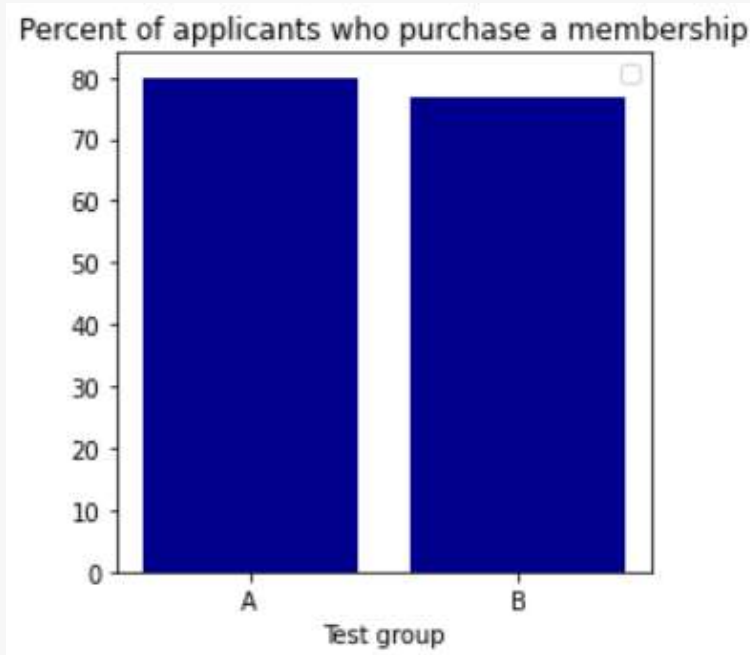


Appendix

Data visualization

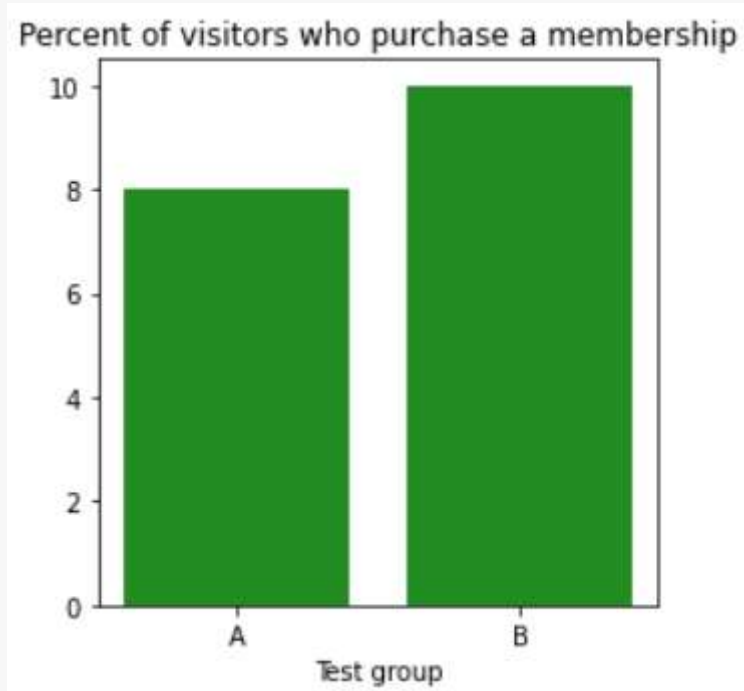


Percent of MuscleHub visitors who fill out an application for the gym.
Source: Self-elaboration (Python).



Percent of MuscleHub applicants who purchase a membership.

Source: Self-elaboration (Python).



Percent of MuscleHub visitors who purchase a membership.
Source: Self-elaboration (Python).



WordCloud created based on MuscleHub interviews.
Source: Self-elaboration (MonkeyLearn WordCloud Generator).

Thank you.