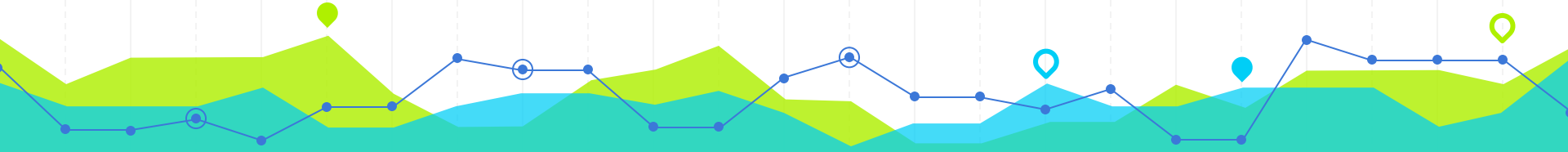

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THE A/B TEST

Description of A/B Test

What?

- Test whether doing a fitness test will increase the number of customers who sign up for a membership
- Group A - given a fitness test
- Group B - not given a fitness test

Why/How?

- Deduce whether giving a fitness test would improve the business at MuscleHub
- The visitors were randomly separated into Group A or B
- Afterwards, the fitness test dates were checked to make sure that it was approximately split by 50%
- The application, and membership date were all recorded for each customer.
- Using this data, we can further analyze the effectiveness of our fitness test.

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DATA!

3 Datasets:

- Customers who picked up an application (IS_APPLICATION)
- Members who picked up an application (IS_MEMBER(only w/ application))
- Total Members (IS_MEMBER(final))

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IS_APPLICATION

- Determines the percentage of people in both groups A and B who picked up an application
- Table of Dataset:

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

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IS_MEMBER (only w/ application)

- Determines the percentage of people (who picked up an application) in both groups A and B that purchased a membership
- Table of Dataset:

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

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IS_MEMBER (final)

- Determines the percentage of people in both groups A and B who purchased a membership
- Table of Dataset:

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

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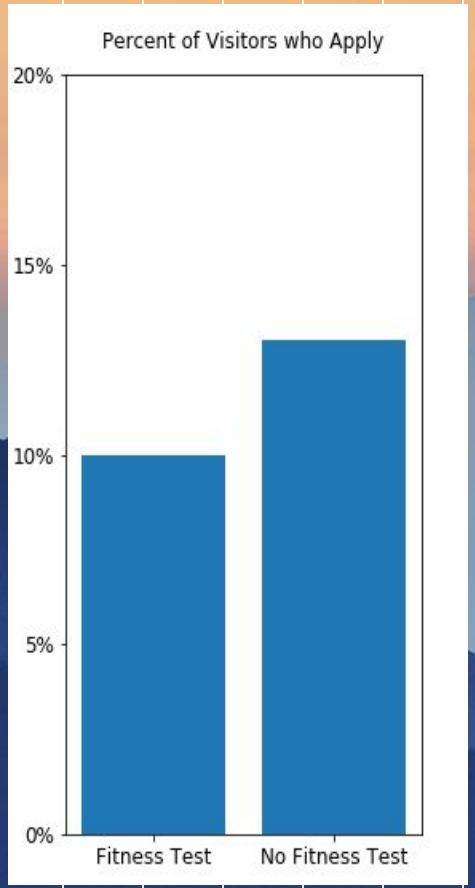
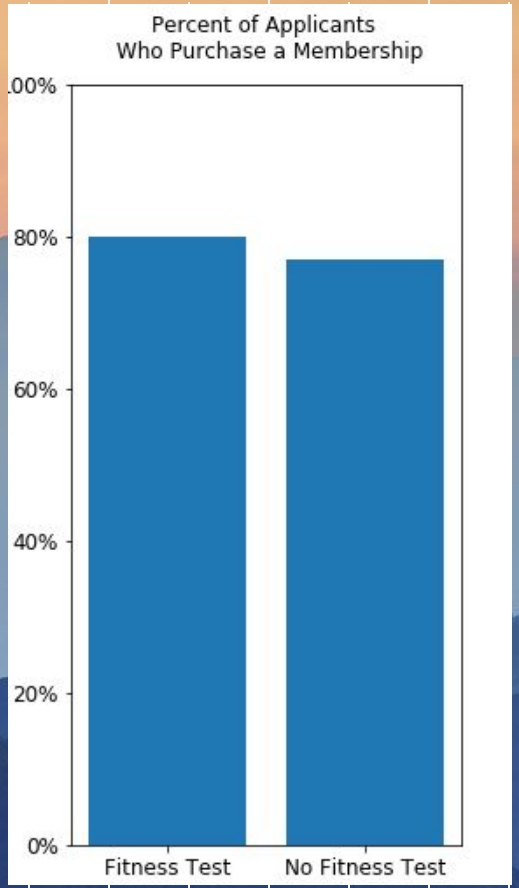
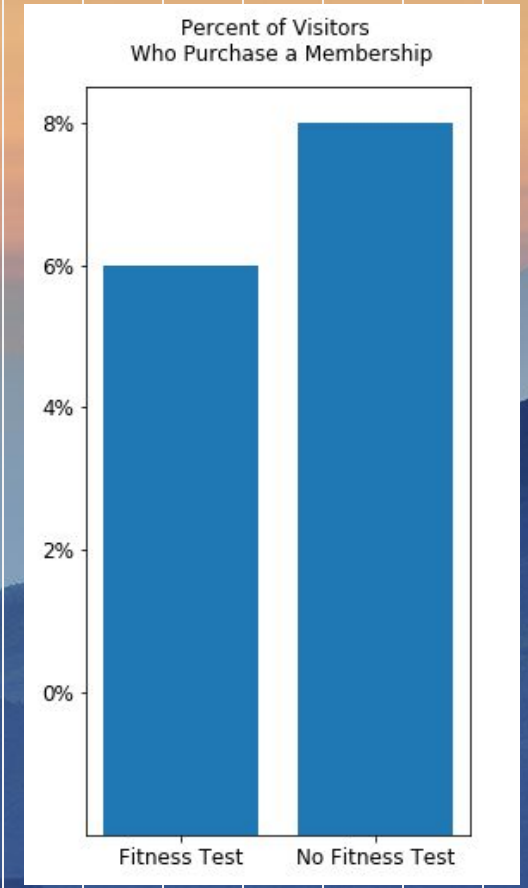
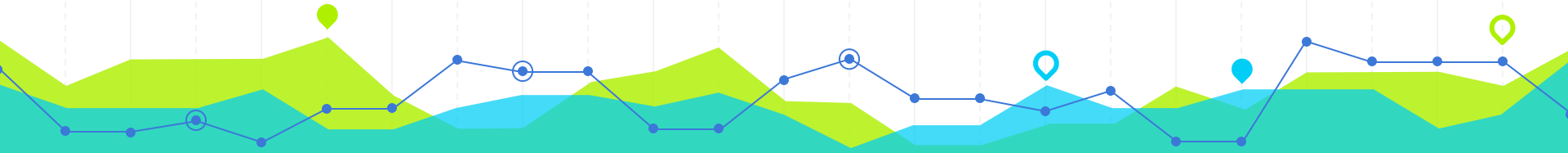
VISUALIZATION OF DATA









Results

3 Hypothesis Tests + Type of Test + Explanation

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3 Hypothesis Tests

- Every difference in percentages between Group A and B was run through a hypothesis test.
- Purpose? Determine the statistical significance of this difference.
- Was run on:

a) Percent w/ Application b) Percent Purchase (only w/ application)	c) Percent Purchase(final) *These percentages can be found in the previous 3 slides*

Type of Test

- CHI2_CONTINGENCY hypothesis test
- WHY? It's because it is used between 2+ categorical datasets.
    - The two categorical datasets:
        - Application vs. No Application
        - Member vs. Not Member
- If the p-value was <= 0.05, then there would statistical significance between Group A and B

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P-value results

- Percent w/ Application : p-value = 0.00096
- Percent Purchase (only w/ application): p-value = 0.43259
- Percent Purchase(final): p-value = 0.01472

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“ Qualitative Data

- Overall, the fitness test was a positive contribution to the customer’s experience
- ¾ Testimonials were satisfied with the customer service @ MuscleHub

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RECOMMENDATION!

Despite the results from qualitative data, the analysis from **quantitative data suggests** that visitors **w/o a fitness test** have a **greater tendency** to **sign up** for a membership.

This is true because the **statistical significance** of visitors picking up an application, and visitors purchasing a membership is **very confident** since the p-value is **less than 0.05**.

Therefore, MuscleHub should **stop using fitness tests** since **visitors w/o a fitness test** have a **greater tendency** to **pick up an application and purchase a membership**.

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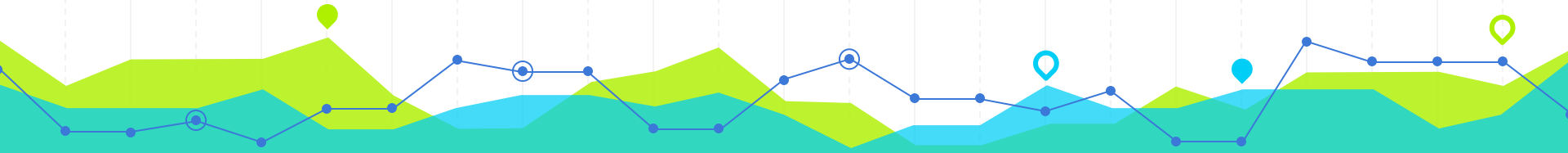

THANKS FOR LISTENING!