

## Thinkful Data Science Boot Camp

### Unit 1.4 Drill 1

#### A/B Tests

##### Does a new supplement help people sleep better?

- ☐ Two versions: we would need a control version and a test version. In this case, the test version (A) can be a placebo supplement that has no affect and the second version can be the new supplement (B).
- ☐ Sample: we would also need a sample of two groups of people. Preferably, the all the people in the group would already have similar lifestyles and sleeping habits. It might be beneficial to have the sample of people also be in the same age group or relatively in the same age group.
- ☐ Hypothesis: I would expect that those that took the supplement to sleep better than those that took the placebo supplement.
- ☐ Outcome(s): to measure if a person slept better, we can use the length of sleep and amount of times a person woke up in the middle of their sleep as key metrics to determine what “sleeping better” means. I would expect those in version B would sleep longer and wake up less than those in version A.
- ☐ Other Measured Variable: this can include age of participants, amount of time normally spend asleep on a daily basis, and caffeine consumption is another variable. Those that have higher caffeine intake may impact the outcome of the study. Level of energy and productivity.

##### Will new uniforms help a gym's business?

- ☐ Two Samples: one can be the old uniform (A) and the other must be the new uniform (B).
- ☐ Sample: sampling in this would be hard to do. One could divide the groups into those who are already gym members and those who are not.
- ☐ Hypothesis: There will be no significant change in the gyms business with new uniforms.
- ☐ Outcome(s): those that are already members at the gym (A) will not increase their time spent at the gym and there will not be an increase in gym membership from those who currently do not attend (B). In this case the key metric in measuring increased business is counting membership and possible counting amount of time members are at the gym-measured both in frequency of visits and length of stay.
- ☐ Other measured variables: time of day, day of the week, and if the study were to continue long enough - time of the year.

### **Will a new homepage improve my online exotic pet rental business?**

- ☐ Two Samples: sample one would be the old homepage (A) and sample would be the new home page (B).
- ☐ Sample: in this case, we are trying to understand which type of homepage will improve the online exotic pet rental business. In reality, we should determine what our target audience would be and then from there we could determine the best format of the homepage to target that audience. In this case we can split the sample to two groups, the old homepage and the new homepage.
- ☐ Outcome(s): I would not expect a new homepage to increase sales by a significant amount.
- ☐ Other measured variable: to measure if the two sample groups are similar we can use age and time spent online. We can measure clicks on site and clicks converted to sales.

### **If I put 'please read' in the email subject will more people read my emails?**

- ☐ Two Samples: sample one would include the words “please read” in the subject email box (A) while the second sample would not include “please read” in the subject (B).
- ☐ Sample:
- ☐ Outcome(s): those that have the “please read” in the subject line will be read more often than those that do not.
- ☐ Other measured variable: tracking if an email was read is difficult to do. Instead, as an indicator if an email was read we can see if the email was opened at all and track that. Using this measurement we would have to assume that those who opened the email, also read it. We can also measure the clicks within the email if there are any hyperlinks that lead to other web pages.