

## DRILL: Create a Research Proposal

### Experiment:

When people install the Happy Days Fitness Tracker app, they are asked to "opt in" to a data collection scheme where their level of physical activity data is automatically sent to the company for product research purposes. During your interview with the company, they tell you that the app is very effective because after installing the app, the data show that people's activity levels rise steadily.

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### Design of experiment, analysis plan, and benchmarks:

We will track the activity rate of a random set of current Happy Days Fitness Tracker for two months before the study and compare it to the activity rate for the two months during the study.

We will then send out a communication asking the current users that we tracked to opt in, and make sure to send out enough invite requests to get a large enough sample of experiment participants, ideally over 500.

We will install the Happy Days Fitness Tracker app on the participant's devices and monitor activity for the next two months. The variable of interest is activity rate. We will also track a sample of randomly selected users with an A/B Test who did not opt in, to factor for seasonality.

If the activity of participants increases by 10% in the next two months (using activity rate for the previous two months), conclude that the app is effective. We will measure the activity rate against activity rate of previous 2 months as well as the control group to determine effectiveness.