**Sample Size**

Due to the novelty of the work, the expected effect size is a bit uncertain. However, for some preliminary power analyses, we use effect sizes observed of acute cannabis use on various cognitive processes also used in programming. We would want a sample size large enough to expect to observe differences in some of these areas (e.g., that could be observed in the cognitive baseline tests we give participants).

Here is the estimated sample size we would need to expect observing differences for each of these cognitive areas assuming alpha = 0.01 (lower than 0.05 to preemptively consider multiple comparison correction in this estimate) and statistical power = 0.80 (note: these are uncertain bounds as we will have less control over the dosage and the like compared to lab studies, but also our tasks may be more cognitively challenging):

* Attention: observed effect is g = 0.223 -> need 239 participants (unlikely to observe this with our sample sizes below)
* Executive functions: observed effect is g = 0.370 -> need 89 participants
* Speed of processing: observed effect is g = 0.384 -> need 83 participants
* Verbal learning: observed effect is g = 0.688 -> need 28 participants
* Verbal Memory: observed effect is g = 0.513 -> need 48 participants
* Working Memory: observed effect is g = 0.514 - need 48 participants

While observing attention differences is likely beyond the scope of this study, we otherwise favor targeting about at least 50-100 participants.