Readme for simulation files:

1. Folder: Simulations
What is in this folder?
Scripts to run and summarize simulations for the paper under strong IV assumptions, with Gamma distribution for the errors on outcome.

Codes scripts:
Script to run the simulations with 3 different sample sizes
1. Simulation_strongIV_n_100_example.R
2. Simulation_strongIV_n_500_example.R
3. Simulation_strongIV_n_2000_example.R

Script to summarize the output from each file
1. SummarizeSimulations_n_100.R
2. SummarizeSimulations_n_500.R
3. SummarizeSimulation_n_2000.R

Structure of these files for different sample sizes are very similar. We created different versions to automate data generation, model fitting and summarizing the model fits.

Script to run simulation and summarizing scripts all at once:
runSimulations.R

Run time:

2. Folder: Data
This folder contains an example of simulated dataset to fit the model and summarize fits.

.RData file with simulated data: Example.RData

What is in this .Rdata file?
i. Yobs = observed outcome vector
ii. D = vector of treatment assignment
iii. X = matrix of confounders
iv. Z = vector of instrumental variable

How to analyze this dataset:

1. Fitting the NP-Bayes IV model

2. Summarize using functions in helper.R

Instruction on how to install the package in R:

```
install.packages('devtools')
library(devtools)
install_github('SamAdhikari/BayesIV')
```