

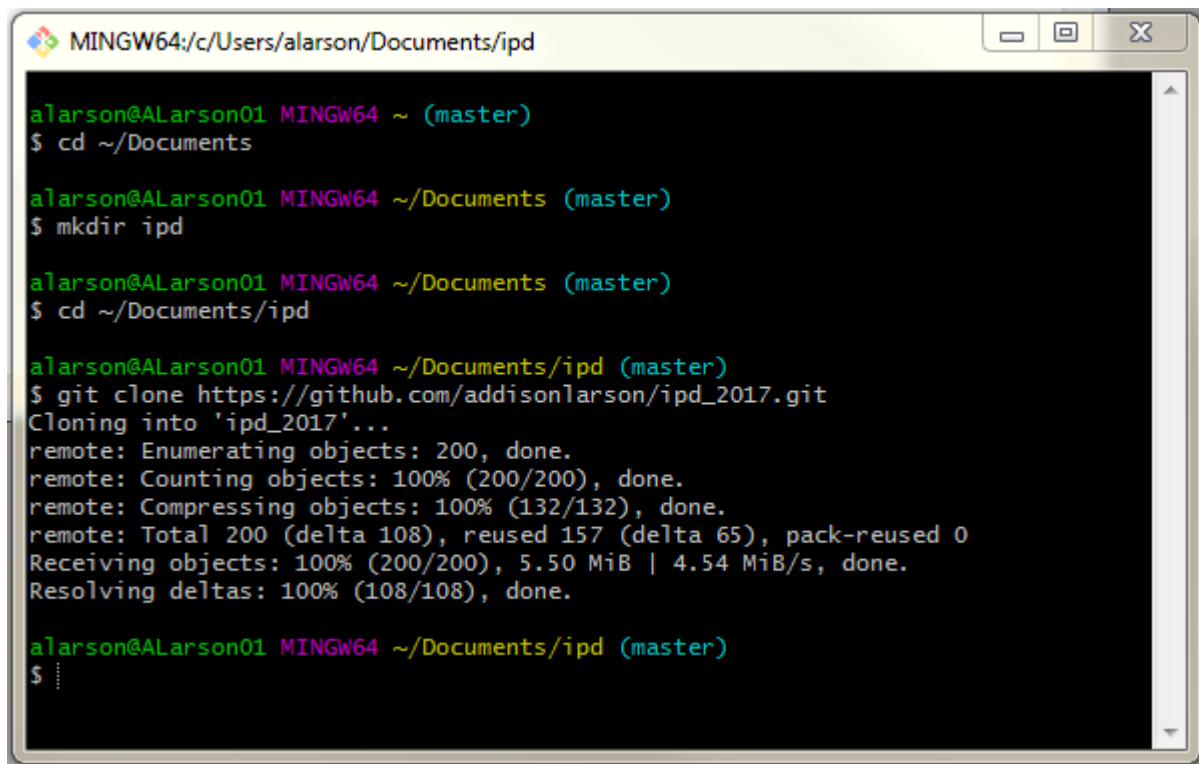
# Getting Started with ipd\_2017

## Before getting started

### 1. Download the code.

There are two ways to do it:

1. From online, visit [https://github.com/addisonlarson/ipd\\_2017](https://github.com/addisonlarson/ipd_2017), click Clone or Download, save the ZIP file somewhere on your PC, and unzip it.
2. From Git BASH, clone the repository with [https://github.com/addisonlarson/ipd\\_2017.git](https://github.com/addisonlarson/ipd_2017.git) or `git@github.com:addisonlarson/ipd_2017.git`. The few lines of sample code below create a folder called “ipd” in My Documents and download the repository’s contents there.



```
MINGW64:/c/Users/alarson/Documents/ipd

alarson@ALarson01 MINGW64 ~ (master)
$ cd ~/Documents

alarson@ALarson01 MINGW64 ~/Documents (master)
$ mkdir ipd

alarson@ALarson01 MINGW64 ~/Documents (master)
$ cd ~/Documents/ipd

alarson@ALarson01 MINGW64 ~/Documents/ipd (master)
$ git clone https://github.com/addisonlarson/ipd_2017.git
Cloning into 'ipd_2017'...
remote: Enumerating objects: 200, done.
remote: Counting objects: 100% (200/200), done.
remote: Compressing objects: 100% (132/132), done.
remote: Total 200 (delta 108), reused 157 (delta 65), pack-reused 0
Receiving objects: 100% (200/200), 5.50 MiB | 4.54 MiB/s, done.
Resolving deltas: 100% (108/108), done.

alarson@ALarson01 MINGW64 ~/Documents/ipd (master)
$
```

### 2. Download and install software.

1. Get R from <https://www.r-project.org/>.
2. Get RStudio from <https://www.rstudio.com/products/rstudio/#Desktop>.

## Next steps

### 1. Open the software and code.

1. Open RStudio.
2. Open ipd\_2017.Rproj from File -> Open Project -> <Folder where you saved the repository> -> ipd\_2017.Rproj.
3. Open script.R.

### 2. Adjust parameters.

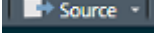
4. Check that the input fields listed under **Fields** are up to date by verifying the newest data schemata on **Census Developers**. Save any changes.
5. Check that the ACS data year is up to date under **Year**, and that **States** and **Counties** correspond to your desired study area. Save any changes.

```
# Year
ipd_year <- 2014
# States
ipd_states <- c("NJ", "PA")
# Counties
ipd_counties <- c("34005", "34007", "34015", "34021",
                  "42017", "42029", "42045", "42091", "42101")
```

6. If this is your first time downloading Census data from the API, you need to get and install an API key. Visit [https://api.census.gov/data/key\\_signup.html](https://api.census.gov/data/key_signup.html) to get a key, uncomment the line below # Census API Key, and replace "YOUR API KEY GOES HERE" with your personal API key, as shown below. Save any changes. Once you do this once, you won't have to do it again.

```
# Census API Key
census_api_key("4193a08f2cq0xc6fcf75cx374aax369dqxxc22fq", install = TRUE)
```

### 3. Run the code.

7. Run the code by clicking the Source  button or Ctrl+A followed by Ctrl+Enter. If you see the error message `Error in library(<name of package>) : there is no package called '<name of package>'`, go to Package Dependencies below.
8. Outputs are saved in <Folder where you saved the repository>/outputs.

## Package dependencies

The error message `Error in library (<name of package>) : there is no package called '<name of package>'` appears when the required packages aren't installed. `script.R` has the following dependencies:

```
library(plyr); library(here); library(sf); library(summarytools);
library(tidy census); library(tidyverse); library(tigris)
```

It's easy to install packages. Open RStudio if it's not open already, go to the console (typically it's shown on the bottom of the screen), and type `install.packages('<name of package>')`. One package at a time; quotation marks required. You may have to do this seven times—once for each package—if you've never run R before.

## More info

- `discussion.pdf` shows the essential math required to compute IPD scores.
- `script_reference.pdf` is a companion document to the script and explains the way the script downloads data and implements IPD analysis, code chunk by code chunk.