Introduction

This process will take you through installing the ipeds library and making sure you can access a survey using it. Hopefully there'll be enough detail to make the scripts work under any OS. This script assumes Windows, but has the Linux and Mac stuff included but commented out.

First, make sure you have devtools installed, and pull down the latest version of the ipeds package from Bryer's Github. I'm also going to pull in the tidyverse set of packages, just for the nice way it displays datasets ('tibbles'). Tidyverse is optional for this introduction, but I use it in the other analyses.

```
#install.packages('devtools') # Uncomment this if you don't already have devtools installed.
library(devtools)
```

```
## Loading required package: usethis
```

```
install_github('https://github.com/jbryer/ipeds')
```

```
## Skipping install of 'ipeds' from a github remote, the SHA1 (ff02fadb) has not changed since last ins
##   Use `force = TRUE` to force installation
```

```
library(ipeds)
```

```
## Loading required package: RCurl

## Loading required package: bitops

## Loading required package: Hmisc

## Loading required package: lattice

## Loading required package: survival

## Loading required package: Formula

## Loading required package: ggplot2

##
## Attaching package: 'Hmisc'

## The following objects are masked from 'package:base':
##
##     format.pval, units

## Loading required package: httr
```

```
suppressMessages(library(tidyverse))
```

The Basics

First, if you're on a Mac, install mdbtools by doing this in a Terminal window:

(See the .Rmd for this, I can't make it render properly in PDF. ;)

If you're on Linux, do (something like) this:

sudo apt-get install mdbtools

If you're on Windows, you'll need the data files from my Github. Save them wherever you want, and set the "dir" variable defined in the below code chunk to point to the location where you saved them. The location I've defined happens to be the place where the ipeds package wants to put the files anyway, so it's maybe a good choice.

```
# Uncomment this line for Mac/Linux:
#download_ipeds(2018)

# This is how to tell ipeds where you've stored your data files. Note that you need the double-slash.
dir <- "C:\\Users\\mjs26\\Documents\\R\\R-3.6.1\\library\\ipeds\\data\\downloaded"

# On Linux or Mac, use this line instead:
dir <-  paste0(find.package(package = 'ipeds'),'/data/downloaded')
```

Accessing the surveys

Now you should be ready to interact with the data files you've downloaded. First, let's see what's available, and what we already have:

```
available_ipeds(dir=dir)
```

```
##    year year_string final provisional downloaded download_date
## 1  2007     2006-07  TRUE       FALSE      FALSE          <NA>
## 2  2008     2007-08  TRUE       FALSE      FALSE          <NA>
## 3  2009     2008-09  TRUE       FALSE      FALSE          <NA>
## 4  2010     2009-10  TRUE       FALSE      FALSE          <NA>
## 5  2011     2010-11  TRUE       FALSE      FALSE          <NA>
## 6  2012     2011-12  TRUE       FALSE       TRUE    2019-11-17
## 7  2013     2012-13  TRUE       FALSE       TRUE    2019-11-17
## 8  2014     2013-14  TRUE       FALSE       TRUE    2019-11-17
## 9  2015     2014-15  TRUE       FALSE       TRUE    2019-11-17
## 10 2016     2015-16  TRUE        TRUE       TRUE    2019-11-17
## 11 2017     2016-17  TRUE       FALSE       TRUE    2019-11-17
## 12 2018     2017-18 FALSE        TRUE       TRUE    2019-11-17
## 13 2019     2018-19 FALSE       FALSE      FALSE          <NA>
##    download_size
## 1           <NA>
## 2           <NA>
## 3           <NA>
## 4           <NA>
## 5           <NA>
## 6        33.4 MB
## 7        38.2 MB
```

```
## 8          38 MB
## 9        39.7 MB
## 10       48.9 MB
## 11       42.2 MB
## 12       50.7 MB
## 13          <NA>
```

This is a handy dataset that tells you exactly how to refer to each of the collections and a brief description of each one:

```
data(surveys)
surveys
```

```
##        SurveyID                                Survey
## 1            HD       Institutional Characteristics
## 2            IC       Institutional Characteristics
## 3         IC_AY       Institutional Characteristics
## 4         IC_PY       Institutional Characteristics
## 5         FLAGS       Institutional Characteristics
## 6         EFEST                          Enrollments
## 7           EFA                          Enrollments
## 8         EFANR                          Enrollments
## 9           EFB                          Enrollments
## 10          EFC                          Enrollments
## 11          EFD                          Enrollments
## 12         EFFY                          Enrollments
## 13         EFD1                          Enrollments
## 14         EFIA                          Enrollments
## 15         EFD2                          Enrollments
## 16         EFCP                          Enrollments
## 17        FLAGS                          Enrollments
## 18          C_A                          Completions
## 19         CCIP                          Completions
## 20        FLAGS                          Completions
## 21        SAL_A        Instructional staff/Salaries
## 22        SAL_B        Instructional staff/Salaries
## 23  SAL_FACULTY        Instructional staff/Salaries
## 24    SAL_A_LT9        Instructional staff/Salaries
## 25        FLAGS        Instructional staff/Salaries
## 26        S_ABD                          Fall Staff
## 27          S_F                          Fall Staff
## 28          S_G                          Fall Staff
## 29         S_CN                          Fall Staff
## 30        FLAGS                          Fall Staff
## 31          EAP      Employees by Assigned Position
## 32        FLAGS      Employees by Assigned Position
## 33        F_F1A                             Finance
## 34         F_F2                             Finance
## 35         F_F3                             Finance
## 36           GR                   Graduation Rates
## 37        GR_L2                   Graduation Rates
## 38        GR200                   Graduation Rates
## 39          SFA Student Financial Aid and Net Price
```

```
## 40          ADM          Admission and Test Scores
## 61        DRVIC       Institutional Characteristics
## 71    ICMISSION       Institutional Characteristics
## 81  CUSTOMCGIDS       Institutional Characteristics
## 101      DRVADM                          Admissions
## 131     DRVEF12                12-month Enrollment
## 141          EF                    Fall Enrollment
## 191    EFA_DIST                    Fall Enrollment
## 201       DRVEF                    Fall Enrollment
## 221         C_B                        Completions
## 231         C_C                        Completions
## 241        CDEP                        Completions
## 251        DRVC                        Completions
## 311 GR_PELL_SSL                   Graduation Rates
## 331       DRVGR                   Graduation Rates
## 341          OM                   Outcome Measures
## 351       DRVOM                   Outcome Measures
## 391        DRVF                            Finance
## 41       SAL_IS                    Human Resources
## 42      SAL_NIS                    Human Resources
## 43         S_OC                    Human Resources
## 44        S_SIS                    Human Resources
## 45         S_IS                    Human Resources
## 46         S_NH                    Human Resources
## 47        DRVHR                    Human Resources
## 48           AL                 Academic Libraries
## 49        DRVAL                 Academic Libraries
##
## 1
## 2                                                                      I
## 3
## 4
## 5
## 6
## 7
## 8                                                                      Ra
## 9
## 10
## 11
## 12
## 13
## 14
## 15
## 16                                                                     Ma
## 17
## 18                                                              Awards/degre
## 19                                                                   Awar
## 20
## 21                                                                Salaries
## 22
## 23                                            Tenure status of full-time instructi
## 24                                                     Number of full-time i
## 25
## 26                        Employees by primary occupation, salary categories, race/ethni
```

```
## 27  Full-time instruction/research/public service staff, by tenure status, academic rank, race/ethnic
## 28                                                     New hires by primary occupation, race/ethnic
## 29           Employees by primary occupation, race/ethnicity, and gender (Degree-granting institut
## 30
## 31
## 32
## 33
## 34
## 35
## 36
## 37
## 38
## 39
## 40
## 61
## 71
## 81
## 101
## 131
## 141
## 191
## 201
## 221                                                                             Number of students rec
## 231                                        Number of students receiving awards/degrees, by award level
## 241                                                      Number of programs offered and number of prog
## 251
## 311 Graduation rate data for Pell Grant and Subsidized Stafford loan recipients, 150% of normal time
## 331                                        Frequently used derived variables (GR) 150% of normal time
## 341                          Award and enrollment data at four, six and eight years for four entering
## 351                                                     Frequently used derived variables (OM) Awar
## 391
## 41                                                       Number and salary outlays for full-time no
## 42                                                                    Number and salary outlays fo
## 43                                                                                    Full- an
## 44                                                              Full-time instructional staff, by
## 45                                    Full-time instructional staff, by faculty and tenure status,
## 46                                                                             New hires by occupationa
## 47
## 48
## 49
##     DataFilePre DataFilePost YearFormat
## 1            HD                       4
## 2            IC                       4
## 3            IC          _AY          4
## 4            IC          _PY          4
## 5         FLAGS                       4
## 6         EFEST                       4
## 7            EF            A          4
## 8            EF         _ANR          2
## 9            EF            B          4
## 10           EF            C          4
## 11           EF            D          4
## 12         EFFY                       4
## 13           EF           D1          4
```

```
## 14         EFIA                    4
## 15           EF              D2    4
## 16           EF              CP    4
## 17        FLAGS                    4
## 18            C              _A    4
## 19            C           _CIP     4
## 20        FLAGS                    4
## 21          SAL              _A    4
## 22          SAL              _B    4
## 23          SAL        _FACULTY    4
## 24          SAL         _A_LT9     4
## 25        FLAGS                    4
## 26            S           _ABD     4
## 27            S             _F     4
## 28            S             _G     4
## 29            S             _CN    4
## 30        FLAGS                    4
## 31          EAP                    4
## 32        FLAGS                    4
## 33            F           _F1A     2
## 34            F            _F2     2
## 35            F            _F3     2
## 36           GR                    4
## 37           GR            _L2     4
## 38       GR200_                    2
## 39          SFA                    4
## 40          ADM                    4
## 61        DRVIC                    4
## 71           IC        MISSION     4
## 81  CUSTOMCGIDS                    4
## 101      DRVADM                    4
## 131     DRVEF12                    4
## 141          EF                    4
## 191          EF         A_DIST     4
## 201       DRVEF                    4
## 221           C              _B    4
## 231           C              _C    4
## 241           C             DEP    4
## 251        DRVC                    4
## 311          GR      _PELL_SSL     4
## 331       DRVGR                    4
## 341          OM                    4
## 351       DRVOM                    4
## 391        DRVF                    4
## 41          SAL            _IS     4
## 42          SAL           _NIS     4
## 43            S            _OC     4
## 44            S           _SIS     4
## 45            S            _IS     4
## 46            S            _NH     4
## 47        DRVHR                    4
## 48           AL                    4
## 49        DRVAL                    4
```

Opening a survey

And finally, here's how you actually pull in one of the surveys. We'll get the Institutional Characteristics header from the 2018 collection.

```
hd <- ipeds_survey('HD', year=2018, dir=dir)
names(hd) <- tolower(names(hd))
glimpse(hd)
```

```
## Observations: 7,153
## Variables: 72
## $ unitid   <int> 100654, 100663, 100690, 100706, 100724, 100733, 10075...
## $ instnm   <chr> "Alabama A & M University", "University of Alabama at...
## $ ialias   <chr> "AAMU", "", "Southern Christian University |Regions U...
## $ addr     <chr> "4900 Meridian Street", "Administration Bldg Suite 10...
## $ city     <chr> "Normal", "Birmingham", "Montgomery", "Huntsville", "...
## $ stabbr   <chr> "AL", "AL", "AL", "AL", "AL", "AL", "AL", "AL", "AL",...
## $ zip      <chr> "35762", "35294-0110", "36117-3553", "35899", "36104-...
## $ fips     <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ obereg   <int> 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5,...
## $ chfnm    <chr> "Dr. Andrew Hugine, Jr.", "Ray L. Watts", "Michael C....
## $ chftitle <chr> "President", "President", "President", "President", "...
## $ gentele  <dbl> 2.563725e+09, 2.059344e+09, 3.343874e+13, 2.568246e+0...
## $ ein      <int> 636001109, 636005396, 237034324, 630520830, 636001101...
## $ duns     <chr> "197216455", "063690705", "126307792", "949687123", "...
## $ opeid    <int> 100200, 105200, 2503400, 105500, 100500, 800400, 1051...
## $ opeflag  <int> 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ webaddr  <chr> "www.aamu.edu/", "www.uab.edu", "www.amridgeuniversit...
## $ adminurl <chr> "www.aamu.edu/Admissions/Pages/default.aspx", "www.ua...
## $ faidurl  <chr> "www.aamu.edu/Admissions/fincialaid/Pages/default.asp...
## $ applurl  <chr> "https://ssb.aamu.edu/PROD/bwskalog.P_DispLoginNon", ...
## $ npricurl <chr> "www2.aamu.edu/scripts/netpricecalc/npcalc.htm", "uab...
## $ veturl   <chr> "", "www.uab.edu/students/veterans", "www.amridgeuniv...
## $ athurl   <chr> "www.aamu.edu/administrativeoffices/irpsp/institution...
## $ disaurl  <chr> "www.aamu.edu/administrativeoffices/VADS/Pages/Disabi...
## $ sector   <int> 1, 1, 2, 1, 1, 0, 1, 4, 1, 1, 1, 2, 4, 2, 3, 4, 4, 2,...
## $ iclevel  <int> 1, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 2, 1, 1, 2, 2, 1,...
## $ control  <int> 1, 1, 2, 1, 1, 1, 1, 1, 1, 1, 1, 2, 1, 2, 3, 1, 1, 2,...
## $ hloffer  <int> 9, 9, 9, 9, 9, 9, 9, 3, 7, 9, 9, 5, 3, 5, 9, 3, 3, 9,...
## $ ugoffer  <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ groffer  <int> 1, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 2, 2, 2, 1, 2, 2, 1,...
## $ hdegofr1 <int> 12, 11, 12, 11, 11, 11, 11, 40, 20, 12, 11, 30, 40, 3...
## $ deggrant <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ hbcu     <int> 1, 2, 2, 2, 1, 2, 2, 2, 2, 2, 2, 2, 2, 1, 2, 2, 2, 2,...
## $ hospital <int> 2, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,...
## $ medical  <int> 2, 1, 2, 2, 2, -2, 2, 2, 2, 2, 1, 2, 2, 2, 2, 2, 2, 2...
## $ tribal   <int> 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,...
## $ locale   <int> 12, 12, 12, 12, 12, 13, 13, 32, 31, 12, 13, 12, 41, 3...
## $ openpubl <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ act      <chr> "A", "A", "A", "A", "A", "A", "A", "A", "A", "A", "A"...
## $ newid    <int> -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -...
## $ deathyr  <int> -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -...
## $ closedat <chr> "-2        ", "-2        ", "-2        ", "-2        ...
```

```
## $ cyactive <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ postsec  <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ pseflag  <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ pset4flg <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,...
## $ rptmth   <int> 1, 1, 1, 1, 1, -2, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1...
## $ instcat  <int> 2, 2, 2, 2, 2, -2, 2, 4, 2, 2, 2, 2, 4, 3, 2, 4, 4, 2...
## $ c15basic <int> 18, 15, 20, 16, 19, -2, 16, 1, 22, 18, 16, 21, 1, 22,...
## $ c15ipug  <int> 16, 14, 19, 17, 13, -2, 17, 1, 15, 16, 17, 9, 1, 12, ...
## $ c15ipgrd <int> 18, 17, 13, 17, 13, -2, 15, 0, 0, 6, 14, 0, 0, 0, 11,...
## $ c15ugprf <int> 10, 9, 5, 9, 10, -2, 14, 2, 5, 9, 15, 14, 2, 11, 7, 2...
## $ c15enprf <int> 4, 5, 5, 4, 3, -2, 4, 1, 2, 3, 4, 2, 1, 2, 3, 1, 1, 4...
## $ c15szset <int> 13, 15, 6, 12, 13, -2, 16, 2, 9, 12, 15, 11, 2, 8, 6,...
## $ ccbasic  <int> 18, 15, 21, 15, 18, -3, 16, 2, 22, 18, 16, 21, 2, 22,...
## $ carnegie <int> 16, 15, 51, 16, 21, -3, 15, 40, 32, 21, 15, 31, 40, 3...
## $ landgrnt <int> 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 1, 2, 2, 2, 2, 2, 2, 2,...
## $ instsize <int> 3, 5, 1, 3, 2, -2, 5, 2, 2, 2, 5, 2, 2, 1, 1, 2, 2, 2...
## $ f1systyp <int> 2, 1, 2, 1, 2, 1, 1, 1, 2, 1, 1, 2, 1, 2, 1, 1, 1, 2,...
## $ f1sysnam <chr> "-2                                                    ...
## $ f1syscod <int> -2, 101050, -2, 101050, -2, 101050, 101050, 101030, -...
## $ cbsa     <int> 26620, 13820, 33860, 26620, 33860, 46220, 46220, 1076...
## $ cbsatype <int> 1, 1, 1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 2, 1, 2, 1, 1,...
## $ csa      <int> 290, 142, -2, 290, -2, -2, -2, 142, 290, -2, 194, 142...
## $ necta    <int> -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -2, -...
## $ countycd <int> 1089, 1073, 1101, 1089, 1101, 1125, 1125, 1123, 1083,...
## $ countynm <chr> "Madison County", "Jefferson County", "Montgomery Cou...
## $ cngdstcd <int> 105, 107, 102, 105, 107, 107, 107, 103, 105, 102, 103...
## $ longitud <dbl> -86.56850, -86.79935, -86.17401, -86.64045, -86.29568...
## $ latitude <dbl> 34.78337, 33.50570, 32.36261, 34.72456, 32.36432, 33....
## $ dfrcgid  <int> 122, 109, 141, 112, 131, -2, 111, 74, 151, 122, 111, ...
## $ dfrcuscg <int> 1, 1, 2, 2, 1, -2, 1, 2, 1, 1, 1, 1, 2, 2, 1, 2, 1, 2...
```