Common Data Set Preparation using R

Nov 9, 2017
CAIR Conference

Alexis Furuichi, Sunny Moon
**Cal State Fullerton at a Glance**
*Fall 2017*

- 40,439 Students Enrolled/largest in CSU
- 34,800 Undergraduate Students
- 4,437 First-Time Freshmen
- 3,755 New Transfers
- 45% UG Students - Pell Recipients
- 58% UG Students 1st gen college students
**Cal State Fullerton at a Glance**

**Fall 2017**

**Ethnic Composition**

- Hispanic: 40.8%
- White: 20.4%
- Asian: 20.5%
- Unknown: 4.1%
- Multiracial: 4.2%
- Amlnd: 0.1%
- Black: 2.0%
- Pacific Islander: 0.2%
- Intl: 7.8%

**Entering Characteristics Composition**

- First-time Freshmen: 47%
- Transfers: 39%
- Grad: 14%
Cal State Fullerton at a Glance
Fall 2017

- Average High School GPA of First-Time Freshmen: 3.63
- Average SAT of First-Time Freshmen: 1101
- Average Transfer GPA: 3.28
- Average Age of Undergraduates: 22
### Trends in Degrees Awarded by Level: 1959 to Present

<table>
<thead>
<tr>
<th>YEAR</th>
<th>BACHELOR'S DEGREES</th>
<th>MASTER'S DEGREES</th>
<th>DOCTORAL DEGREES</th>
<th>TOTAL DEGREES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-2017</td>
<td>8450</td>
<td>2038</td>
<td>42</td>
<td>10530</td>
</tr>
<tr>
<td>2015-2016</td>
<td>8397</td>
<td>1868</td>
<td>47</td>
<td>10312</td>
</tr>
<tr>
<td>2014-2015</td>
<td>7725</td>
<td>1667</td>
<td>62</td>
<td>9454</td>
</tr>
<tr>
<td>2013-2014</td>
<td>7451</td>
<td>1476</td>
<td>59</td>
<td>8986</td>
</tr>
<tr>
<td>2012-2013</td>
<td>7472</td>
<td>1566</td>
<td>26</td>
<td>9064</td>
</tr>
<tr>
<td>2011-2012</td>
<td>6724</td>
<td>1563</td>
<td>19</td>
<td>8306</td>
</tr>
<tr>
<td>2010-2011</td>
<td>6875</td>
<td>1562</td>
<td>11</td>
<td>8448</td>
</tr>
<tr>
<td>2009-2010</td>
<td>6481</td>
<td>1394</td>
<td>7</td>
<td>7882</td>
</tr>
<tr>
<td>2008-2009</td>
<td>6580</td>
<td>1421</td>
<td></td>
<td>8001</td>
</tr>
<tr>
<td><strong>TOTALS:</strong></td>
<td><strong>223,610</strong></td>
<td><strong>46,932</strong></td>
<td><strong>273</strong></td>
<td><strong>270,815</strong></td>
</tr>
</tbody>
</table>

---

**Earlier Periods:**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>BACHELOR'S DEGREES</th>
<th>MASTER'S DEGREES</th>
<th>DOCTORAL DEGREES</th>
<th>TOTAL DEGREES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969-1970</td>
<td>1750</td>
<td>419</td>
<td></td>
<td>2169</td>
</tr>
<tr>
<td>1968-1969</td>
<td>1465</td>
<td>297</td>
<td></td>
<td>1762</td>
</tr>
<tr>
<td>1967-1968</td>
<td>1182</td>
<td>223</td>
<td></td>
<td>1405</td>
</tr>
<tr>
<td>1966-1967</td>
<td>860</td>
<td>166</td>
<td></td>
<td>1026</td>
</tr>
<tr>
<td>1965-1966</td>
<td>652</td>
<td>124</td>
<td></td>
<td>776</td>
</tr>
<tr>
<td>1964-1965</td>
<td>517</td>
<td>47</td>
<td></td>
<td>564</td>
</tr>
<tr>
<td>1963-1964</td>
<td>401</td>
<td>8</td>
<td></td>
<td>409</td>
</tr>
<tr>
<td>1962-1963</td>
<td>301</td>
<td>0</td>
<td></td>
<td>301</td>
</tr>
<tr>
<td>1961-1962</td>
<td>220</td>
<td>0</td>
<td></td>
<td>220</td>
</tr>
<tr>
<td>1960-1961</td>
<td>65</td>
<td>0</td>
<td></td>
<td>65</td>
</tr>
</tbody>
</table>

**Total Degrees:**

TOTAL DEGREES: 270,815
Common Data Set Initiative

• Collaborative Efforts between Publishers and the educational community.

• **Institutional Reporting**
  – Chancellor’s Office
  – Federal Reporting
  – Surveys: External Organizations
    • US News & WR, College Board, NSF/GSS,
    • CGS/GRE, Peterson, Barren’s, Wintergreen, Princeton Review
About Presenters – Alexis

- Ph.D. Sociology
- Statistician/Project Coordinator
- Evaluation Analyst
- Data & Stat Consultant
- Research Analyst

http://asfuruichi.wixsite.com/furuichi
Evolution of CDS Preparation at CSUF

- SPSS syntax => SPSS output => Excel
- SPSS macro => R tables => LaTex => PDF output
- SPSS macro => R tables => PDF output
- R codes => R tables => PDF output

R packages
  Knitr
  ReportRs
****C11 file.
dataset activate speronly.
select if ~missing(hsgpa).
execute.
recode hsgpa (3.75 thru highest = 1)(3.50 thru 3.74= 2)(3.25 thru 3.49 =3)
    (3.00 thru 3.24 = 4)(2.50 thru 2.99 = 5)(2.0 thru 2.49 = 6)(1.00 thru 1.99 = 7)(0 thru 0.99 = 8) into hsrank.
execute.
value labels hsrank 1 '3.75 thru highest' 2 '3.50 thru 3.74' 3 '3.25 thru 3.49' 4 '3.00 thru 3.24'
    5 '2.50 thru 2.99' 6 '2.0 thru 2.49' 7 '1.00 thru 1.99' 8 '0.00 thru 0.99'.

dataset declare C11.
aggregate /outfile = C11 /break = hsrank /freq = nu.

dataset activate C11.
save translate /outfile = 'C11.csv' /type = csv /fieldnames /cells = labels /replace.
dataset close C11.

****C12 file.
dataset activate speronly.
dataset declare C12.
aggregate /outfile = C12 /avgGPA = mean(hsgpa).
add files file = C12 /keep = avgGPA.
### SPSS Output

**Count**

<table>
<thead>
<tr>
<th>1Rrace Institution-reported: Race or ethnicity</th>
<th>IRsex Institution-reported: Sex</th>
<th>0 Female</th>
<th>1 Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 American Indian or Alaska Native</td>
<td></td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>2 Asian</td>
<td></td>
<td>164</td>
<td>53</td>
<td>217</td>
</tr>
<tr>
<td>3 Black or African American</td>
<td></td>
<td>34</td>
<td>5</td>
<td>39</td>
</tr>
<tr>
<td>4 Hispanic or Latino</td>
<td></td>
<td>271</td>
<td>235</td>
<td>806</td>
</tr>
<tr>
<td>5 Native Hawaiian or Other Pacific Islander</td>
<td></td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6 White</td>
<td></td>
<td>180</td>
<td>97</td>
<td>277</td>
</tr>
<tr>
<td>8 Foreign or Nonresident alien</td>
<td></td>
<td>68</td>
<td>103</td>
<td>171</td>
</tr>
<tr>
<td>9 Two or more races/ethnicities</td>
<td></td>
<td>64</td>
<td>24</td>
<td>88</td>
</tr>
<tr>
<td>10 Unknown</td>
<td></td>
<td>30</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>1114</td>
<td>527</td>
<td>1641</td>
</tr>
</tbody>
</table>
CDS Excel Template

**Enrollment by Racial/Ethnic Category.** Provide numbers of undergraduate students for each of the following categories as of the institution’s official fall reporting date or as of October 15, 2015. Include international students only in the category “Nonresident aliens.” Complete the “Total Undergraduates” column only if you cannot provide data for the first two columns. Report as your institution reports to IPEDS: persons who are Hispanic should be reported only on the Hispanic line, not under any race, and persons who are non-Hispanic multi-racial should be reported only under “Two or more races.”

<table>
<thead>
<tr>
<th>Class</th>
<th>Total Undergraduates (both degree- and non-degree-seeking)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonresident aliens</td>
<td>3,181</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>2,205</td>
</tr>
<tr>
<td>Black or African American, non-Hispanic</td>
<td>105</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>704</td>
</tr>
<tr>
<td>American Indian or Alaska Native, non-Hispanic</td>
<td>7</td>
</tr>
<tr>
<td>Asian, non-Hispanic</td>
<td>201</td>
</tr>
<tr>
<td>Native Hawaiian or other Pacific Islander, non-Hispanic</td>
<td>146</td>
</tr>
<tr>
<td>Two or more races, non-Hispanic</td>
<td>1472</td>
</tr>
<tr>
<td>Race and/or ethnicity unknown</td>
<td>1235</td>
</tr>
<tr>
<td>TOTAL</td>
<td>33,144</td>
</tr>
</tbody>
</table>
define !prepCDS (dig2Yr = !cmdend)
  cd !quote(!concat("M:\sfuruichi\surveys\CDS\20\",dig2Yr, ",-2018\output")).

****B1 file.
  match files file = !quote(!concat("M:\ras\sper\sper",dig2Yr,’4.sav’)) /in = sperfile
  /table = !quote(!concat("M:\\RAS\Historical Data\ERSR094\",dig2Yr,’4.sav’)) /in= racefile
  /by ssn
  /keep = cwid ssn sex age eth eth4mr eth1 eth2 eth3 eth4 eth5 multrace ipeds ethnic recode enstat le
  degobj stusstan acadplan1 units categor5 yrtrm1 race1 to race5 ftpt.
  dataset name sperace.
  execute.
  dataset activate sperace.
  if (eth4mr = 4) and (eth = ’6’) Race5 = 624.
  if (eth4mr = 4) and (eth = ’H’) Race5 = 601.
  dataset activate I3.
  save translate /type = csv /outfile = ’I3.csv’.
  dataset close B1.
  dataset close all.
  !enddefine.
Running SPSS Macro

```
***create base files.
insert file = 'M:\sfuruichi\surveys\CDS\2017-2018\CDS.sps'.
!prepCDS dig2Yr = 17.

insert file = 'M:\sfuruichi\surveys\CDS\set2\program\CDSsecJ.sps'.
!prepCDSsecJ dig2Yr = 16.

insert file = 'M:\sfuruichi\surveys\CDS\set2\program\CDSsecF.sps'.
!prepCDSsecF dig2Yr = 16.

dataset close all.

***create outputs.
insert file = 'M:\sfuruichi\surveys\CDS\set2\program\CDSR.sps'.
insert file = 'M:\sfuruichi\surveys\CDS\set2\program\CDSRsecJ.sps'.
insert file = 'M:\sfuruichi\surveys\CDS\set2\program\CDSRsecF.sps'.
```
R (3.3.3) in SPSS (v.24)

Need to install R Essentials for SPSS
LaTex Codes

\center{\textbf{B. ENROLLMENT AND PERSISTENCE}} \\ 
\raggedright{} 
\begin{doublespace} 
\textbf{B1. Institutional Enrollment - Men and Women} \\ 
\end{doublespace} 

Provide numbers of students for each of the following categories as of the inst students formerly designated as "first professional" in the graduate cells.\begin{spacing}{1.5} \end{spacing} 
\begin{table} ![htbp] 
\centering 
\input{filepath/B1.tex} \\ 
\end{table} 
\begin{spacing}{1.5} \end{spacing} 
\begin{tabular}{lr} Total all undergraduates: & \underline{\input{filepath/B1TotUG.txt}} \\ Total all graduate: & \underline{\input{filepath/B1TotG.txt}} \\ GRAND TOTAL ALL STUDENTS: & \underline{\input{filepath/B1GrandTot.txt}} \\ \end{tabular} \\
LaTex Preamble
B. ENROLLMENT AND PERSISTENCE

B1. Institutional Enrollment - Men and Women

Provide numbers of students for each of the following categories as of the institutions official fall reporting date or as of October 15, 2016. Note: Report students formerly designated as first professional in the graduate cells.

<table>
<thead>
<tr>
<th>Category</th>
<th>FTmen</th>
<th>FTwomen</th>
<th>PTmen</th>
<th>PTwomen</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-time Fresh</td>
<td>1873</td>
<td>2414</td>
<td>63</td>
<td>51</td>
</tr>
<tr>
<td>Other Fresh</td>
<td>853</td>
<td>924</td>
<td>71</td>
<td>63</td>
</tr>
<tr>
<td>Other Deg</td>
<td>9160</td>
<td>11812</td>
<td>2724</td>
<td>3001</td>
</tr>
<tr>
<td>Total Deg</td>
<td>11886</td>
<td>15150</td>
<td>2858</td>
<td>3115</td>
</tr>
<tr>
<td>Other UG</td>
<td>28</td>
<td>41</td>
<td>18</td>
<td>48</td>
</tr>
<tr>
<td>Total UG</td>
<td>11914</td>
<td>15191</td>
<td>2876</td>
<td>3163</td>
</tr>
<tr>
<td>FT Grad</td>
<td>428</td>
<td>776</td>
<td>419</td>
<td>550</td>
</tr>
<tr>
<td>Other Grad</td>
<td>705</td>
<td>843</td>
<td>991</td>
<td>1080</td>
</tr>
<tr>
<td>Other cred</td>
<td>5</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Grad</td>
<td>1133</td>
<td>1619</td>
<td>1415</td>
<td>1637</td>
</tr>
</tbody>
</table>

Total all undergraduates: 33144
Total all graduate: 5804
GRAND TOTAL ALL STUDENTS: 38948
CDS Output Components

• Headers
• Texts
• Tables
• In-text numbers
B. ENROLLMENT AND PERSISTENCE

Institutional Effectiveness

Fall 2016

Common Data Set 2016-2017

Graduation Rates

For Bachelor’s Programs

Fall 2009 Cohort
title: "B. ENROLLMENT AND PERSISTENCE"
author: "Institutional Effectiveness"
date: "Fall 2016"

output:
    html_document: default
    pdf_document: default
    word_document: default
header-include:
    - \usepackage{fancyhdr}
    - \pagestyle{fancy}
    - \fancyhf{}
    - \chead{Common Data Set 2016-2017}

---

# Graduation Rates
## For Bachelor's Programs
### Fall 2009 Cohort
### B1. Institutional Enrollment - Men and Women

<table>
<thead>
<tr>
<th>X</th>
<th>FTmen</th>
<th>FTwomen</th>
<th>PTmen</th>
<th>PTwomen</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-time Fresh</td>
<td>1764</td>
<td>2510</td>
<td>68</td>
<td>84</td>
</tr>
<tr>
<td>Other Fresh</td>
<td>759</td>
<td>879</td>
<td>80</td>
<td>60</td>
</tr>
<tr>
<td>Other Deg</td>
<td>9670</td>
<td>12343</td>
<td>2941</td>
<td>3258</td>
</tr>
<tr>
<td>Total Deg</td>
<td>12193</td>
<td>15732</td>
<td>3089</td>
<td>3402</td>
</tr>
<tr>
<td>Other UG</td>
<td>20</td>
<td>49</td>
<td>30</td>
<td>61</td>
</tr>
<tr>
<td>Total UG</td>
<td>12213</td>
<td>15781</td>
<td>3119</td>
<td>3463</td>
</tr>
<tr>
<td>FT Grad</td>
<td>353</td>
<td>792</td>
<td>382</td>
<td>527</td>
</tr>
<tr>
<td>Other Grad</td>
<td>601</td>
<td>867</td>
<td>956</td>
<td>1177</td>
</tr>
<tr>
<td>Other cred</td>
<td>NA</td>
<td>NA</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total Grad</td>
<td>954</td>
<td>1659</td>
<td>1339</td>
<td>1707</td>
</tr>
</tbody>
</table>

Total all undergraduates: 34576.
Total all graduate: 5659.
GRAND TOTAL ALL STUDENTS: 40235.
## B1. Institutional Enrollment - Men and Women

```r
## [1] read.csv("/output/B1.csv")
B1 <- read.csv("/output/B1.csv")
FTMen <- subset(B1, B1$fullpart=="Full-time" & B1$sexCDS=="Men", select = c(grp4b1,freq))
FTWom <- subset(B1, B1$fullpart=="Full-time" & B1$sexCDS=="Women", select = c(grp4b1,freq))
FT <- merge(FTMen,FTWom,by="grp4b1")
PTMen <- subset(B1, B1$fullpart=="Part-time" & B1$sexCDS=="Men", select = c(grp4b1,freq))
PTWom <- subset(B1, B1$fullpart=="Part-time" & B1$sexCDS=="Women", select = c(grp4b1,freq))
PT <- merge(PTMen,PTWom,by="grp4b1")
tab <- merge(FT,PT,by="grp4b1", all=TRUE)
secl <- tab[1:3,]
seclwt <- rbind(secl,c(3.5,colSums(secl[-1])))
sec2 <- tab[4,]
sec2b <- rbind(sec2b,c(4.5,colSums(sec2b[-1])))
sec2wt <- subset(sec2wt,sec2wt$grp4b1>=-4.0)
sec3 <- tab[5:7,]
sec3wt <- rbind(sec3,c(7.5,colSums(sec3[-1]),na.rm=TRUE))
revB1 <- rbind(seclwt,sec2wt,sec3wt)

## [1] rbind(c("First-time Fresh","Other Fresh","Other Deg","Total Deg","Other UG","Total UG","FT Grad","Other Grad","Other cred","Total Grad"),revB1) colnames(revB1) <- c("First-time Fresh","Other Fresh","Other Deg","Total Deg","Other UG","Total UG","FT Grad","Other Grad","Other cred","Total Grad") rownames(revB1) <- NULL
```

```
## totalUG <- sum(revB1[6,2:5])
totalG <- sum(revB1[10,2:5])
grandTotal <- totalUG + totalG
```

```r
## [1] cbind(c("Total all undergraduates: \'r totalUG\'." Total all graduates: \'r totalG\'.
GRAND TOTAL ALL STUDENTS: \'r grandTotal\'."
```

### Note
```
```
```
APPENDIX I. UNDERGRADUATE DEGREE PROGRAMS

TABLE 1. Undergraduate Program Applications, Admissions, and Enrollments
For each undergraduate degree program, a table will be provided with the number of student applications, number of students admitted, percent admitted, the number of new enrollments, and the percentage of new enrollments. Percentage of students enrolled is the number of students enrolled divided by the number of students admitted or the yield rate.

<table>
<thead>
<tr>
<th>Academic Year</th>
<th># Applied</th>
<th># Admitted</th>
<th>% Admitted</th>
<th># Enrolled</th>
<th>% Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>95</td>
<td>83</td>
<td>87.4</td>
<td>16</td>
<td>19.3</td>
</tr>
<tr>
<td>2013-2014</td>
<td>132</td>
<td>99</td>
<td>75.0</td>
<td>12</td>
<td>12.1</td>
</tr>
<tr>
<td>2014-2015</td>
<td>109</td>
<td>77</td>
<td>70.6</td>
<td>8</td>
<td>10.4</td>
</tr>
<tr>
<td>2015-2016</td>
<td>121</td>
<td>93</td>
<td>76.9</td>
<td>17</td>
<td>18.3</td>
</tr>
<tr>
<td>2016-2017</td>
<td>158</td>
<td>107</td>
<td>67.7</td>
<td>14</td>
<td>13.1</td>
</tr>
</tbody>
</table>

TABLE 1-A. First-Time Freshmen: Program Applications, Admissions, and Enrollments

<table>
<thead>
<tr>
<th>Academic Year</th>
<th># Applied</th>
<th># Admitted</th>
<th>% Admitted</th>
<th># Enrolled</th>
<th>% Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>25</td>
<td>17</td>
<td>68.0</td>
<td>1</td>
<td>5.88</td>
</tr>
<tr>
<td>2013-2014</td>
<td>33</td>
<td>11</td>
<td>33.3</td>
<td>3</td>
<td>27.27</td>
</tr>
<tr>
<td>2014-2015</td>
<td>39</td>
<td>21</td>
<td>53.8</td>
<td>7</td>
<td>33.33</td>
</tr>
<tr>
<td>2015-2016</td>
<td>37</td>
<td>21</td>
<td>56.8</td>
<td>6</td>
<td>28.57</td>
</tr>
<tr>
<td>2016-2017</td>
<td>46</td>
<td>31</td>
<td>67.4</td>
<td>12</td>
<td>38.71</td>
</tr>
</tbody>
</table>

TABLE 1-B. Upper Division Transfers: Program Applications, Admissions, and Enrollments

<table>
<thead>
<tr>
<th>Academic Year</th>
<th># Applied</th>
<th># Admitted</th>
<th>% Admitted</th>
<th># Enrolled</th>
<th>% Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>25</td>
<td>17</td>
<td>68.0</td>
<td>1</td>
<td>5.88</td>
</tr>
<tr>
<td>2013-2014</td>
<td>33</td>
<td>11</td>
<td>33.3</td>
<td>3</td>
<td>27.27</td>
</tr>
<tr>
<td>2014-2015</td>
<td>39</td>
<td>21</td>
<td>53.8</td>
<td>7</td>
<td>33.33</td>
</tr>
<tr>
<td>2015-2016</td>
<td>37</td>
<td>21</td>
<td>56.8</td>
<td>6</td>
<td>28.57</td>
</tr>
<tr>
<td>2016-2017</td>
<td>46</td>
<td>31</td>
<td>67.4</td>
<td>12</td>
<td>38.71</td>
</tr>
</tbody>
</table>
```r
--
title: "PPR Tables Physics (BA, BS, MS)"
author: "Office of Assessment and Institutional Effectiveness"
date: "Fall 2017"
output:
  word_document:
    reference_docx: word-styles-reference-01.docx
--

# APPENDIX I. UNDERGRADUATE DEGREE PROGRAMS

## TABLE 1. Undergraduate Program Applications, Admissions, and Enrollments

### TABLE 1-A. First-time Freshmen: Program Applications, Admissions, and Enrollments

```{r echo=FALSE}
t1Aadm <- read.csv("T1AappliedAdmitted.csv")
t1Aenr <- read.csv("T1Aenrolled.csv")
t1A <- merge(t1Aadm,t1Aenr,by="AY", all = TRUE)
t1A$pctAdmitted <- format((t1A$enrolled/t1A$admitted)*100,digits=2,nsmall=1)
t1A$pctEnrolled <- format((t1A$enrolled/t1A$applied)*100,digits=3,nsmall=1)
library(knitr)
kable(t1A)
```

### TABLE 1-B. Upper Division Transfers: Program Applications, Admissions, and Enrollments

```{r echo=FALSE}
t1Badm <- read.csv("T1BappliedAdmitted.csv")
t1Benr <- read.csv("T1Benrolled.csv")
t1B <- merge(t1Badm,t1Benr,by="AY", all = TRUE)
t1B$pctAdmitted <- format((t1B$enrolled/t1B$admitted)*100,digits=2,nsmall=1)
t1B$pctEnrolled <- format((t1B$enrolled/t1B$applied)*100,digits=3,nsmall=1)
library(knitr)
kable(t1B)
```

## TABLE 2. Undergraduate Program Enrollment in FTES

### TABLE 2-A. Undergraduate Program Enrollment in FTES

```{r echo=FALSE}
t2A <- read.csv("T2A.csv")
is.num <- sapply(t2A. is.numeric)
```
Thank you!

http://www.fullerton.edu/analyticalstudies/
Sunny Moon: hmoon@fullerton.edu
Alexis Furuichi: sfuruichi@fullerton.edu
http://asfuruichi.wixsite.com/furuichi