R Notebook

```r
include <- function(library_name){
  if( !(library_name %in% installed.packages()) )
    install.packages(library_name)
  library(library_name, character.only=TRUE)
}
include("rvest")
include("tidyr")
include("stringr")
```

```r
my_url <- "http://ems.csuchico.edu/APSS/schedule/spr2019/CSCI.shtml"
html1 <- read_html(my_url)
my_url <- "http://ems.csuchico.edu/APSS/schedule/spr2020/CSCI.shtml"
html2 <- read_html(my_url)
my_url <- "http://ems.csuchico.edu/APSS/schedule/spr2019/MATH.shtml"
html3 <- read_html(my_url)
my_url <- "http://ems.csuchico.edu/APSS/schedule/spr2020/MATH.shtml"
html4 <- read_html(my_url)
```

This chunk does the actual scraping of the html

The function returns a tibble of the data scraped

```r
read_class_schedule <- function(url) {

  classes <- url %>% html_nodes(".classrow")

  subject <- classes %>%
              html_nodes("td.subj") %>%
              html_text()

  catNum <- classes %>%
          html_nodes("td.cat_num") %>%
          html_text() %>%
          as.integer()

  sect <- classes %>%
          html_nodes("td.sect") %>%
          html_text() %>%
          as.integer()

  type <- classes %>%
          html_nodes("td.comp") %>%
          html_text()

  title <- classes %>%
          html_nodes("td.title") %>%
          html_text()

  units <- classes %>%
```

```r
        html_nodes("td.units") %>%
        html_text() %>%
        as.integer()

  instruct <- classes %>%
        html_nodes("td.Instructor") %>%
        html_text()

  totenro <- classes %>%
        html_nodes("td.enrtot") %>%
        html_text() %>%
        as.integer()

  temp <- url %>%
        html_nodes("#bd > div > div > h1") %>%
        html_text()

  pattern1 <- "(Spring|Fall)\ (\\d*)"
  yearSem <- tibble(strings=stringr::str_match_all(temp, pattern1))

  returned <- tibble(subject=subject, catNum=catNum,
                     sect=sect, type=type,
                     title=title, units=units,
                     instruct=instruct, totenro=totenro,
                     sem=yearSem$strings[[1]][1,2],
                     year=yearSem$strings[[1]][1,3])

  return(returned)
}

csci2019 <- read_class_schedule(html1)
head(csci2019)
```

```
## # A tibble: 6 x 10
##   subject catNum  sect type  title      units instruct    totenro sem   year
##   <chr>    <int> <int> <chr> <chr>      <int> <chr>         <int> <chr> <chr>
## 1 CSCI       101     1 DIS   Intro to~      3 " "               0 Spri~ 2019
## 2 CSCI       102     1 DIS   Living W~      3 Juliano,B~       26 Spri~ 2019
## 3 CSCI       111     2 ACT   Programm~     NA Gibson,To~       29 Spri~ 2019
## 4 CSCI       111     4 LEC   Programm~      4 Raigoza,J~       49 Spri~ 2019
## 5 CSCI       111     6 ACT   Programm~     NA Raigoza,J~       19 Spri~ 2019
## 6 CSCI       211     2 ACT   Programm~     NA Donnelly,~       27 Spri~ 2019
```

```r
csci2020 <- read_class_schedule(html2)
head(csci2020)
```

```
## # A tibble: 6 x 10
##   subject catNum  sect type  title       units instruct   totenro sem   year
##   <chr>    <int> <int> <chr> <chr>       <int> <chr>        <int> <chr> <chr>
## 1 CSCI       101     1 DIS   Intro to ~      3 Herring,~        1 Spri~ 2020
## 2 CSCI       102     1 DIS   Living Wi~      3 Harris,K~        0 Spri~ 2020
## 3 CSCI       111     2 ACT   Programmi~     NA Gibson,T~        4 Spri~ 2020
## 4 CSCI       111     4 LEC   Programmi~      4 Renner,R~        4 Spri~ 2020
```

```
## 5 CSCI      111     6 ACT   Programmi~     NA Renner,R~       2 Spri~ 2020
## 6 CSCI      211     2 ACT   Programmi~     NA Herring,~       9 Spri~ 2020
```

```
math2019 <- read_class_schedule(html3)
head(math2019)
```

```
## # A tibble: 6 x 10
##   subject catNum  sect type  title      units instruct   totenro sem   year
##   <chr>    <int> <int> <chr> <chr>      <int> <chr>        <int> <chr> <chr>
## 1 MATH        31     1 LAB   Foundati~      1 " "              0 Spri~ 2019
## 2 MATH        51     1 LAB   Foundati~      1 " "              0 Spri~ 2019
## 3 MATH        51     3 LAB   Foundati~      1 Huck,Soph~      24 Spri~ 2019
## 4 MATH        51     5 LAB   Foundati~      1 Xiong,Mou~      21 Spri~ 2019
## 5 MATH        51     7 LAB   Foundati~      1 " "              0 Spri~ 2019
## 6 MATH        51     9 LAB   Foundati~      1 Archuleta~      34 Spri~ 2019
```

```
math2020 <- read_class_schedule(html4)
head(math2020)
```

```
## # A tibble: 6 x 10
##   subject catNum  sect type  title      units instruct   totenro sem   year
##   <chr>    <int> <int> <chr> <chr>      <int> <chr>        <int> <chr> <chr>
## 1 MATH        31     1 LAB   Foundatio~     1 " "              0 Spri~ 2020
## 2 MATH        51     1 LAB   Foundatio~     1 " "              0 Spri~ 2020
## 3 MATH        51     5 LAB   Foundatio~     1 " "              0 Spri~ 2020
## 4 MATH        51     8 LAB   Foundatio~     1 McElwain~        2 Spri~ 2020
## 5 MATH        51    10 LAB   Foundatio~     1 Huff,Ste~        2 Spri~ 2020
## 6 MATH        51    12 LAB   Foundatio~     1 McElwain~        2 Spri~ 2020
```