avengersLPS

#Introduction

#Loading the CSV File

Download the CSV from FiveThirtyEight Github and save as "avengers.csv"

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.2.1 --
```

```
## v ggplot2 3.0.0      v purrr   0.2.5
## v tibble  1.4.2      v dplyr   0.7.6
## v tidyr   0.8.1      v stringr 1.3.1
## v readr   1.1.1      v forcats 0.3.0
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
file = "avengers2.csv"
if(!file.exists(file)){
  download.file("https://raw.githubusercontent.com/fivethirtyeight/data/master/avengers/avengers.csv",
    destfile=file)
}
```

Loading "avengers.csv" in variable "avengers_df"

```
library(readr);
avengers_df <- read.csv("avengers.csv", quote="\"");
avengers_df;
```

```
##                                                                URL
## 1                       http://marvel.wikia.com/Henry_Pym_(Earth-616)
## 2                     http://marvel.wikia.com/Janet_van_Dyne_(Earth-616)
## 3                      http://marvel.wikia.com/Anthony_Stark_(Earth-616)
## 4                http://marvel.wikia.com/Robert_Bruce_Banner_(Earth-616)
## 5                      http://marvel.wikia.com/Thor_Odinson_(Earth-616)
## 6                     http://marvel.wikia.com/Richard_Jones_(Earth-616)
## 7                     http://marvel.wikia.com/Steven_Rogers_(Earth-616)
## 8                      http://marvel.wikia.com/Clint_Barton_(Earth-616)
## 9                   http://marvel.wikia.com/Pietro_Maximoff_(Earth-616)
## 10                   http://marvel.wikia.com/Wanda_Maximoff_(Earth-616)
## 11                 http://marvel.wikia.com/Jacques_Duquesne_(Earth-616)
## 12                         http://marvel.wikia.com/Hercules_(Earth-616)
## 13                     http://marvel.wikia.com/T%27Challa_(Earth-616)
## 14                          http://marvel.wikia.com/Vision_(Earth-616)
## 15                            http://marvel.wikia.com/Dane_Whitman
## 16             http://marvel.wikia.com/Natalia_Romanova_(Earth-616)#
## 17                        http://marvel.wikia.com/Mantis_(Earth-616)#
## 18                    http://marvel.wikia.com/Henry_McCoy_(Earth-616)#
## 19               http://marvel.wikia.com/Heather_Douglas_(Earth-616)#
## 20               http://marvel.wikia.com/Patricia_Walker_(Earth-616)#
## 21                 http://marvel.wikia.com/Matthew_Hawk_(Earth-616)#
## 22                 http://marvel.wikia.com/Robert_Frank_(Earth-616)#
## 23                http://marvel.wikia.com/Simon_Williams_(Earth-616)#
```

```
## 24                          http://marvel.wikia.com/Yondu_Udonta_(Earth-691)#
## 25                   http://marvel.wikia.com/Martinex_T%27Naga_(Earth-691)#
## 26                         http://marvel.wikia.com/Charlie-27_(Earth-691)#
## 27                   http://marvel.wikia.com/Nicholette_Gold_(Earth-691)#
## 28                    http://marvel.wikia.com/Stakar_Ogord_(Earth-691)#
## 29                     http://marvel.wikia.com/Vance_Astro_(Earth-691)#
## 30                          http://marvel.wikia.com/Mar-Vell_(Earth-616)#
## 31                   http://marvel.wikia.com/Carol_Danvers_(Earth-616)#
## 32                   http://marvel.wikia.com/Samuel_Wilson_(Earth-616)#
## 33                          http://marvel.wikia.com/Jocasta_(Earth-616)#
## 34                    http://marvel.wikia.com/Greer_Nelson_(Earth-616)#
## 35                http://marvel.wikia.com/Jennifer_Walters_(Earth-616)#
## 36                 http://marvel.wikia.com/Monica_Rambeau_(Earth-616)#
## 37                             http://marvel.wikia.com/Eros_(Earth-616)#
## 38                    http://marvel.wikia.com/James_Rhodes_(Earth-616)#
## 39                   http://marvel.wikia.com/Barbara_Morse_(Earth-616)#
## 40                   http://marvel.wikia.com/Moira_Brandon_(Earth-616)#
## 41                  http://marvel.wikia.com/Benjamin_Grimm_(Earth-616)#
## 42                   http://marvel.wikia.com/Bonita_Juarez_(Earth-616)#
## 43                    http://marvel.wikia.com/Marc_Spector_(Earth-616)#
## 44                     http://marvel.wikia.com/John_Walker_(Earth-616)#
## 45     http://marvel.wikia.com/Human_Torch_(Android)_(Earth-616)#
## 46                   http://marvel.wikia.com/Miguel_Santos_(Earth-616)#
## 47                 http://marvel.wikia.com/Julia_Carpenter_(Earth-616)#
## 48                  http://marvel.wikia.com/2ZP45-9-X-51_(Earth-616)#
## 49                    http://marvel.wikia.com/Chris_Powell_(Earth-616)#
## 50                 http://marvel.wikia.com/Namor_McKenzie_(Earth-616)#
## 51                      http://marvel.wikia.com/Scott_Lang_(Earth-616)#
## 52                   http://marvel.wikia.com/Anthony_Druid_(Earth-616)#
## 53              http://marvel.wikia.com/Marrina_Smallwood_(Earth-616)#
## 54             http://marvel.wikia.com/Ravonna_Renslayer_(Earth-6311)#
## 55                    http://marvel.wikia.com/Rita_DeMara_(Earth-616)#
## 56                  http://marvel.wikia.com/Dennis_Dunphy_(Earth-616)#
## 57                      http://marvel.wikia.com/Gilgamesh_(Earth-616)#
## 58                   http://marvel.wikia.com/Reed_Richards_(Earth-616)#
## 59                     http://marvel.wikia.com/Susan_Storm_(Earth-616)#
## 60                  http://marvel.wikia.com/Wendell_Vaughn_(Earth-616)#
## 61                 http://marvel.wikia.com/Ashley_Crawford_(Earth-616)#
## 62                      http://marvel.wikia.com/Dinah_Soar_(Earth-616)#
## 63                   http://marvel.wikia.com/DeMarr_Davis_(Earth-616)#
## 64                    http://marvel.wikia.com/Val_Ventura_(Earth-616)#
## 65                   http://marvel.wikia.com/Craig_Hollis_(Earth-616)#
## 66                   http://marvel.wikia.com/Gene_Lorrene_(Earth-616)#
## 67                   http://marvel.wikia.com/Doreen_Green_(Earth-616)#
## 68                      http://marvel.wikia.com/Monkey_Joe_(Earth-616)#
## 69                   http://marvel.wikia.com/Doug_Taggert_(Earth-616)#
## 70                      http://marvel.wikia.com/Tippy-Toe_(Earth-616)#
## 71                    http://marvel.wikia.com/Wade_Wilson_(Earth-616)#
## 72                    http://marvel.wikia.com/Greg_Willis_(Earth-616)#
## 73                          http://marvel.wikia.com/Sersi_(Earth-616)#
## 74                   http://marvel.wikia.com/Peter_Parker_(Earth-616)#
## 75                  http://marvel.wikia.com/Walter_Newell_(Earth-616)#
## 76                  http://marvel.wikia.com/Elvin_Haliday_(Earth-616)#
## 77                 http://marvel.wikia.com/William_Baker_(Earth-616)#
```

```
## 78               http://marvel.wikia.com/Crystalia_Amaquelin_(Earth-616)#
## 79                http://marvel.wikia.com/Eric_Masterson_(Earth-616)#
## 80                  http://marvel.wikia.com/Philip_Javert_(Earth-921)#
## 81                http://marvel.wikia.com/Melissa_Darrow_(Earth-9201)#
## 82                       http://marvel.wikia.com/Deathcry_(Earth-616)#
## 83               http://marvel.wikia.com/Anthony_Stark_(Earth-96020)#
## 84     http://marvel.wikia.com/Giuletta_Nefaria_(Masque)_(Earth-616)#
## 85                http://marvel.wikia.com/Vance_Astrovik_(Earth-616)#
## 86                http://marvel.wikia.com/Angelica_Jones_(Earth-616)#
## 87             http://marvel.wikia.com/Delroy_Garrett_Jr._(Earth-616)#
## 88     http://marvel.wikia.com/Maria_de_Guadalupe_Santiago_(Earth-616)#
## 89                http://marvel.wikia.com/Jonathan_Hart_(Earth-616)#
## 90                 http://marvel.wikia.com/Kelsey_Leigh_(Earth-616)#
## 91                    http://marvel.wikia.com/Luke_Cage_(Earth-616)#
## 92                      http://marvel.wikia.com/Veranke_(Earth-616)#
## 93                http://marvel.wikia.com/James_Howlett_(Earth-616)#
## 94               http://marvel.wikia.com/Robert_Reynolds_(Earth-616)#
## 95                   http://marvel.wikia.com/Maya_Lopez_(Earth-616)#
## 96   http://marvel.wikia.com/Nathaniel_Richards_(Iron_Lad)_(Earth-6311)#
## 97                http://marvel.wikia.com/Elijah_Bradley_(Earth-616)#
## 98                http://marvel.wikia.com/William_Kaplan_(Earth-616)#
## 99                 http://marvel.wikia.com/Dorrek_VIII_(Earth-616)#
## 100               http://marvel.wikia.com/Cassandra_Lang_(Earth-616)#
## 101             http://marvel.wikia.com/Katherine_Bishop_(Earth-616)#
## 102             http://marvel.wikia.com/Vision_(Jonas)_(Earth-616)#
## 103             http://marvel.wikia.com/Thomas_Shepherd_(Earth-616)#
## 104                http://marvel.wikia.com/Daniel_Rand_(Earth-616)#
## 105             http://marvel.wikia.com/Stephen_Strange_(Earth-616)#
## 106                         http://marvel.wikia.com/Ares_(Earth-616)#
## 107   http://marvel.wikia.com/James_Buchanan_Barnes_(Earth-616)#
## 108              http://marvel.wikia.com/Jessica_Drew_(Earth-616)#
## 109             http://marvel.wikia.com/Jessica_Jones_(Earth-616)#
## 110              http://marvel.wikia.com/Amadeus_Cho_(Earth-616)#
## 111               http://marvel.wikia.com/Maria_Hill_(Earth-616)#
## 112             http://marvel.wikia.com/Robert_Baldwin_(Earth-616)#
## 113             http://marvel.wikia.com/Sharon_Carter_(Earth-616)#
## 114             http://marvel.wikia.com/Eric_O%27Grady_(Earth-616)#
## 115               http://marvel.wikia.com/Brunnhilde_(Earth-616)#
## 116             http://marvel.wikia.com/Richard_Rider_(Earth-616)#
## 117             http://marvel.wikia.com/Brian_Braddock_(Earth-616)#
## 118             http://marvel.wikia.com/Dennis_Sykes_(Earth-616)#
## 119                 http://marvel.wikia.com/Noh-Varr_(Earth-616)#
## 120             http://marvel.wikia.com/Thaddeus_Ross_(Earth-616)#
## 121               http://marvel.wikia.com/John_Aman_(Earth-616)#
## 122               http://marvel.wikia.com/Shang-Chi_(Earth-616)#
## 123             http://marvel.wikia.com/James_Santini_(Earth-616)#
## 124             http://marvel.wikia.com/Emery_Schaub_(Earth-616)#
## 125             http://marvel.wikia.com/Jeanne_Foucault_(Earth-616)#
## 126             http://marvel.wikia.com/Fiona_(Inhuman)_(Earth-616)#
## 127             http://marvel.wikia.com/Jennifer_Takeda_(Earth-616)#
## 128                   http://marvel.wikia.com/Hollow_(Earth-616)#
## 129               http://marvel.wikia.com/Julie_Power_(Earth-616)#
## 130               http://marvel.wikia.com/Alani_Ryan_(Earth-616)#
## 131                http://marvel.wikia.com/Ken_Mack_(Earth-616)#
```

```
## 132                    http://marvel.wikia.com/Humberto_Lopez_(Earth-616)#
## 133                   http://marvel.wikia.com/Johnathon_Gallo_(Earth-616)#
## 134                            http://marvel.wikia.com/Lyra_(Earth-8009)#
## 135                   http://marvel.wikia.com/Anya_Corazon_(Earth-616)#
## 136                   http://marvel.wikia.com/Brandon_Sharpe_(Earth-616)#
## 137                http://marvel.wikia.com/Kevin_Masterson_(Earth-616)#
## 138                http://marvel.wikia.com/Michiko_Musashi_(Earth-616)#
## 139                http://marvel.wikia.com/Takashi_Matsuya_(Earth-616)#
## 140                   http://marvel.wikia.com/Daisy_Johnson_(Earth-616)#
## 141                    http://marvel.wikia.com/Ororo_Munroe_(Earth-616)#
## 142                http://marvel.wikia.com/Matthew_Murdock_(Earth-616)#
## 143                http://marvel.wikia.com/Eugene_Thompson_(Earth-616)#
## 144                   http://marvel.wikia.com/Otto_Octavius_(Earth-616)#
## 145             http://marvel.wikia.com/Alexander_Summers_(Earth-616)#
## 146                http://marvel.wikia.com/Samuel_Guthrie_(Earth-616)#
## 147             http://marvel.wikia.com/Roberto_da_Costa_(Earth-616)#
## 148                       http://marvel.wikia.com/Eden_Fesi_(Earth-616)#
## 149             http://marvel.wikia.com/Captain_Universe_(Earth-616)#
## 150                   http://marvel.wikia.com/Isabel_Kane_(Earth-616)#
## 151             http://marvel.wikia.com/Marcus_Milton_(Earth-13034)#
## 152          http://marvel.wikia.com/Rogue_(Anna_Marie)_(Earth-616)#
## 153             http://marvel.wikia.com/Shiro_Yoshida_(Earth-616)#
## 154                   http://marvel.wikia.com/Ex_Nihilo_(Earth-616)#
## 155      http://marvel.wikia.com/Abyss_(Ex_Nihilo%27s)_(Earth-616)#
## 156                   http://marvel.wikia.com/Nightmask_(Earth-616)#
## 157                http://marvel.wikia.com/Kevin_Connor_(Earth-616)#
## 158                http://marvel.wikia.com/Sam_Alexander_(Earth-616)#
## 159                http://marvel.wikia.com/America_Chavez_(Earth-616)#
## 160          http://marvel.wikia.com/Loki_Laufeyson_(Ikol)_(Earth-616)#
## 161                http://marvel.wikia.com/David_Alleyne_(Earth-616)#
## 162          http://marvel.wikia.com/Nicholas_Fury,_Jr._(Earth-616)#
## 163             http://marvel.wikia.com/Phillip_Coulson_(Earth-616)#
## 164                http://marvel.wikia.com/Tony_Masters_(Earth-616)#
## 165                http://marvel.wikia.com/Victor_Mancha_(Earth-616)#
## 166                http://marvel.wikia.com/Monica_Chang_(Earth-616)#
## 167          http://marvel.wikia.com/Doombot_(Avenger)_(Earth-616)#
## 168                     http://marvel.wikia.com/Alexis_(Earth-616)#
## 169             http://marvel.wikia.com/Eric_Brooks_(Earth-616)#
## 170             http://marvel.wikia.com/Adam_Brashear_(Earth-616)#
## 171             http://marvel.wikia.com/Victor_Alvarez_(Earth-616)#
## 172                http://marvel.wikia.com/Ava_Ayala_(Earth-616)#
## 173                     http://marvel.wikia.com/Kaluu_(Earth-616)#
##                              Name.Alias Appearances Current. Gender
## 1           Henry Jonathan "Hank" Pym        1269      YES    MALE
## 2                     Janet van Dyne        1165      YES  FEMALE
## 3          Anthony Edward "Tony" Stark        3068      YES    MALE
## 4                  Robert Bruce Banner        2089      YES    MALE
## 5                        Thor Odinson        2402      YES    MALE
## 6                Richard Milhouse Jones         612      YES    MALE
## 7                        Steven Rogers        3458      YES    MALE
## 8               Clinton Francis Barton        1456      YES    MALE
## 9                     Pietro Maximoff         769      YES    MALE
## 10                    Wanda Maximoff        1214      YES  FEMALE
## 11                   Jacques Duquesne         115       NO    MALE
```

```
## 12                        Heracles   741   YES   MALE
## 13                        T'Challa   780   NO    MALE
## 14             Victor Shade (alias)  1036   YES   MALE
## 15                    Dane Whitman   482   NO    MALE
## 16       Natalia Alianovna Romanova  1112   YES FEMALE
## 17                         Brandt    160   NO FEMALE
## 18                  Henry P. McCoy  1886   NO    MALE
## 19                 Heather Douglas   332   NO FEMALE
## 20                   Patsy Walker   557   NO FEMALE
## 21     Matthew Liebowitz (birth name)  197   NO    MALE
## 22             Robert L. Frank Sr.   106   NO    MALE
## 23                 Simon Williams   692   YES   MALE
## 24                   Yondu Udonta   109   NO    MALE
## 25                Martinex T'Naga   100   NO    MALE
## 26                     Charlie-27   132   NO    MALE
## 27                Nicholette Gold   108   NO FEMALE
## 28                         Stakar   100   NO    MALE
## 29                  Vance Astrovik   156   NO    MALE
## 30                        Mar-Vell   254   NO    MALE
## 31        Carol Susan Jane Danvers   935   YES FEMALE
## 32            Samuel Thomas Wilson   576   YES   MALE
## 33                        Jocasta   141   YES FEMALE
## 34              Greer Grant Nelson   355   YES FEMALE
## 35               Jennifer Walters   933   YES FEMALE
## 36                 Monica Rambeau   348   YES FEMALE
## 37                           Eros   206   NO    MALE
## 38                 James R. Rhodes   533   NO    MALE
## 39        Barbara Barton (nee Morse)   374   NO FEMALE
## 40                  Moira Brandon     2   NO FEMALE
## 41             Benjamin Jacob Grimm  2305   NO    MALE
## 42                  Bonita Juarez    83   NO FEMALE
## 43                   Marc Spector   402   NO    MALE
## 44                  John F. Walker   352   NO    MALE
## 45              Jim Hammond (alias)   565   NO    MALE
## 46                  Miguel Santos   112   NO    MALE
## 47                 Julia Carpenter   218   NO FEMALE
## 48                           X-51   149   NO    MALE
## 49             Christopher Powell   168   NO    MALE
## 50                 Namor McKenzie  1561   NO    MALE
## 51         Scott Edward Harris Lang   217   NO    MALE
## 52            Anthony Ludgate Druid   158   NO    MALE
## 53               Marrina Smallwood    86   NO FEMALE
## 54          Ravonna Lexus Renslayer    41   NO FEMALE
## 55                   Rita DeMara    68   NO FEMALE
## 56                  Dennis Dunphy    70   NO    MALE
## 57                                    61   NO    MALE
## 58                   Reed Richards  2125   YES   MALE
## 59        Susan Richards (nee Storm)  1761   NO    MALE
## 60            Wendell Elvis Vaughn   293   NO    MALE
## 61                Ashley Crawford    36   YES FEMALE
## 62                                    22   NO FEMALE
## 63                    DeMarr Davis    31   YES   MALE
## 64                    Val Ventura    34   YES   MALE
## 65                   Craig Hollis    33   YES   MALE
```

```
## 66                         Gene Lorrene     4    NO   MALE
## 67                        Dorreen Green    47    NO FEMALE
## 68                                         7    NO   MALE
## 69                         Doug Taggert     3    NO   MALE
## 70                                        16    NO FEMALE
## 71                         Wade Wilson   575    NO   MALE
## 72                         Greg Willis    58    NO   MALE
## 73                               Circe   237    NO FEMALE
## 74               Peter Benjamin Parker  4333   YES   MALE
## 75                        Walter Newell   126    NO   MALE
## 76                        Elvin Haliday   158    NO   MALE
## 77                        William Baker   355    NO   MALE
## 78           Crystal Amaquelin Maximoff   517    NO FEMALE
## 79                 Eric Kevin Masterson   202    NO   MALE
## 80                       Phillip Javert    31    NO   MALE
## 81                                        28    NO FEMALE
## 82                                        50    NO FEMALE
## 83                 Anthony Edward Stark    27    NO   MALE
## 84                  "Giulietta Nefaria"    18    NO FEMALE
## 85                       Vance Astrovik   302    NO   MALE
## 86                       Angelica Jones   330    NO FEMALE
## 87                   Delroy Garrett Jr.   101    NO   MALE
## 88           Maria de Guadalupe Santiago    43    NO FEMALE
## 89                        Jonathan Hart   126    NO   MALE
## 90                   Kelsey Leigh Shorr    24    NO FEMALE
## 91                           Carl Lucas   886   YES   MALE
## 92                              Veranke   159    NO FEMALE
## 93                 James "Logan" Howlett  3130   YES   MALE
## 94                      Robert Reynolds   241    NO   MALE
## 95                           Maya Lopez    67    NO FEMALE
## 96                    Nathaniel Richards    23    NO   MALE
## 97                       Elijah Bradley   103    NO   MALE
## 98               William "Billy" Kaplan   123   YES   MALE
## 99   Dorrek VIII/Theodore "Teddy" Altman   110   YES   MALE
## 100                          Cassie Lang   160    NO FEMALE
## 101             Katherine "Kate" Bishop   132   YES FEMALE
## 102                         Alias: Jonas   121    NO   MALE
## 103             Thomas "Tommy" Shepherd    59   YES   MALE
## 104             Daniel Thomas Rand K'ai   629    NO   MALE
## 105       Doctor Stephen Vincent Strange  1324    NO   MALE
## 106                                 Ares   236    NO   MALE
## 107               James Buchanan Barnes   663    NO   MALE
## 108                 Jessica Miriam Drew   525   YES FEMALE
## 109                        Jessica Jones   205   YES FEMALE
## 110                          Amadeus Cho   108    NO   MALE
## 111                           Maria Hill   359   YES FEMALE
## 112                       Robbie Baldwin   299    NO   MALE
## 113                        Sharon Carter   333    NO FEMALE
## 114                         Eric O'Grady    88    NO   MALE
## 115                          Brunnhilde   369    NO FEMALE
## 116                        Richard Rider   380    NO   MALE
## 117                        Brian Braddock   545    NO   MALE
## 118                         Dennis Sykes     6    NO   MALE
## 119                              Noh-Varr   126   YES   MALE
```

```
## 120                     Thaddeus Ross   417    NO   MALE
## 121                         John Aman    31   YES   MALE
## 122                         Shang-Chi   310   YES   MALE
## 123                     James Santini    40   YES   MALE
## 124                      Emery Schaub    26   YES   MALE
## 125                   Jeanne Foucault    63   YES FEMALE
## 126                             Fiona     2   YES FEMALE
## 127                   Jennifer Takeda    73   YES FEMALE
## 128                           Yvette    22   YES FEMALE
## 129                      Julie Power   153   YES FEMALE
## 130                       Alani Ryan    73   YES FEMALE
## 131                         Ken Mack    59    NO   MALE
## 132                   Humberto Lopez    66   YES   MALE
## 133                     Johnny Gallo    43   YES   MALE
## 134                             Lyra    55   YES FEMALE
## 135                    Anya Corazon   108   YES FEMALE
## 136                   Brandon Sharpe    64   YES   MALE
## 137                  Kevin Masterson    62   YES   MALE
## 138                  Michiko Musashi    94   YES FEMALE
## 139                    Taki Matsuya    18   YES   MALE
## 140                    Daisy Johnson    81    NO FEMALE
## 141                     Ororo Munroe  1598    NO FEMALE
## 142                    Matt Murdock  1375    NO   MALE
## 143                   Flash Thompson   746   YES   MALE
## 144                    Otto Octavius   561    NO   MALE
## 145                    Alex Summers   592   YES   MALE
## 146                   Samuel Guthrie   679   YES   MALE
## 147                  Roberto da Costa   491   YES   MALE
## 148                        Eden Fesi    65   YES   MALE
## 149                                     55   YES   MALE
## 150                        Izzy Kane    44   YES FEMALE
## 151                    Marcus Milton    65   YES   MALE
## 152                       Anna Marie   877   YES FEMALE
## 153                   Shiro Yoshida   176   YES   MALE
## 154                                     24   YES   MALE
## 155                                     25   YES FEMALE
## 156                             Adam    35   YES   MALE
## 157                Kevin Kale Connor    44   YES   MALE
## 158                    Sam Alexander    78   YES   MALE
## 159                   America Chavez    22   YES FEMALE
## 160                   Loki Laufeyson    77    NO   MALE
## 161                    David Alleyne   115   YES   MALE
## 162  Nicholas Fury, Jr., Marcus Johnson    77   YES   MALE
## 163                   Phillip Coulson    69   YES   MALE
## 164                     Tony Masters   173    NO   MALE
## 165                    Victor Mancha    75   YES   MALE
## 166                     Monica Chang    12   YES FEMALE
## 167                                     14   YES   MALE
## 168                           Alexis    13   YES FEMALE
## 169                      Eric Brooks   198   YES   MALE
## 170                    Adam Brashear    29   YES   MALE
## 171                    Victor Alvarez    45   YES   MALE
## 172                        Ava Ayala    49   YES FEMALE
## 173                            Kaluu    35   YES   MALE
```

```
##    Probationary.Introl Full.Reserve.Avengers.Intro Year
## 1                                          Sep-63 1963
## 2                                          Sep-63 1963
## 3                                          Sep-63 1963
## 4                                          Sep-63 1963
## 5                                          Sep-63 1963
## 6                                          Sep-63 1963
## 7                                          Mar-64 1964
## 8                                          May-65 1965
## 9                                          May-65 1965
## 10                                         May-65 1965
## 11                                         Sep-65 1965
## 12                                         Oct-67 1967
## 13                                         May-68 1968
## 14                                         Nov-68 1968
## 15                                         Dec-69 1969
## 16                                         May-73 1973
## 17                                         Aug-73 1973
## 18                Jul-75                    Sep-76 1976
## 19                Jul-75                    Sep-76 1976
## 20                Nov-75                    Sep-76 1976
## 21                                          Aug-75 1975
## 22                Apr-77                    Jul-78 1978
## 23                Apr-77                    Mar-79 1979
## 24                                          Feb-78 1978
## 25                                          Feb-78 1978
## 26                                          Feb-78 1978
## 27                                          Feb-78 1978
## 28                                          Feb-78 1978
## 29                                          Feb-78 1978
## 30                                          Jul-78 1978
## 31                                          Apr-79 1979
## 32                                          Jun-79 1979
## 33                Jul-80                    Nov-88 1988
## 34                                          Sep-81 1981
## 35                                          Jul-82 1982
## 36                Jan-83                    May-83 1983
## 37                Jun-83                    May-84 1984
## 38                May-84                    Sep-84 1984
## 39                Jun-84                    Sep-84 1984
## 40                                          Nov-93 1993
## 41                                          Jun-86 1986
## 42                                          Sep-87 1987
## 43                Sep-87                    Jun-88 1988
## 44                                          May-89 1989
## 45                                          Nov-89 1989
## 46                                          Apr-91 1991
## 47                                          Sep-92 1992
## 48                                          Jun-92 1992
## 49                                          May-93 1993
## 50                                          Dec-85 1985
## 51                Jan-87                     3-Feb 2003
## 52                                          Apr-87 1987
## 53                                          Dec-87 1987
```

8

```
## 54                                    May-88 1988
## 55                                    Nov-88 1988
## 56                                    Jan-88 1988
## 57                                    Feb-89 1989
## 58                                    Feb-89 1989
## 59                                    Feb-89 1989
## 60                                    Oct-89 1989
## 61                                    Jul-89 1989
## 62                                    Jul-89 1989
## 63                                    Jul-89 1989
## 64                                    Jul-89 1989
## 65                                    Jul-89 1989
## 66                                     5-Apr 2005
## 67                                     5-May 2005
## 68                                     5-May 2005
## 69                                     5-May 2005
## 70                                     5-Jul 2005
## 71                                     7-Sep 2007
## 72                                     9-Aug 2009
## 73                                    Feb-90 1990
## 74                                    Apr-90 1990
## 75                                    Jul-90 1990
## 76            Feb-91                          1900
## 77            Feb-91                          1900
## 78            Aug-91             Jan-92 1992
## 79                               Jan-92 1992
## 80                               Dec-92 1992
## 81                               Jun-93 1993
## 82                               Jul-93 1993
## 83                               Feb-96 1996
## 84                               Apr-96 1996
## 85                               May-98 1998
## 86                               May-98 1998
## 87                               Apr-00 2000
## 88                               Jul-00 2000
## 89                                1-Aug 2001
## 90                                4-Jun 2004
## 91                                5-Mar 2005
## 92                                5-Mar 2005
## 93                                5-Jun 2005
## 94                                5-Oct 2005
## 95                                5-Nov 2005
## 96                                5-Apr 2005
## 97                                5-Apr 2005
## 98                                5-Apr 2005
## 99                                5-Apr 2005
## 100                               5-Jun 2005
## 101                               5-Jun 2005
## 102                               6-Feb 2006
## 103                               6-Jun 2006
## 104                               7-Feb 2007
## 105                               7-Feb 2007
## 106                               7-Mar 2007
## 107                               8-Dec 2008
```

```
## 108                                        8-Dec 2008
## 109                                       10-Aug 2010
## 110                                        9-Dec 2009
## 111                                       10-May 2010
## 112                                       10-Jun 2010
## 113                                       10-May 2010
## 114                                       10-May 2010
## 115                                       10-May 2010
## 116                                       10-May 2010
## 117                                       10-May 2010
## 118                                       10-Sep 2010
## 119                                       10-Jun 2010
## 120                                       11-Jun 2011
## 121                                       10-Dec 2010
## 122                                       11-Apr 2011
## 123                                              1900
## 124                                              1900
## 125                                       10-Aug 2010
## 126                                              1900
## 127                                       10-Aug 2010
## 128                                              1900
## 129                                              1900
## 130                                              1900
## 131                                       10-Aug 2010
## 132                                       10-Aug 2010
## 133                                              1900
## 134                                              1900
## 135                                              1900
## 136                                       10-Aug 2010
## 137                                              1900
## 138                                              1900
## 139                                              1900
## 140                                       12-Jan 2012
## 141                                       12-Jan 2012
## 142                                       11-Nov 2011
## 143                                       12-Apr 2012
## 144                                       13-Jan 2013
## 145                                       12-Dec 2012
## 146                                       13-Feb 2013
## 147                                       13-Feb 2013
## 148                                       13-Feb 2013
## 149                                       13-Feb 2013
## 150                                       13-Feb 2013
## 151                                       13-Feb 2013
## 152                                       13-Apr 2013
## 153                                       13-May 2013
## 154                                       13-Oct 2013
## 155                                       13-Oct 2013
## 156                                       13-Oct 2013
## 157                                       13-Oct 2013
## 158                                       15-Feb 2015
## 159                                       13-Jul 2013
## 160                                       13-Jul 2013
## 161                                       13-Sep 2013
```

```
## 162                                          13-Apr 2013
## 163                                          13-Apr 2013
## 164                                          13-May 2013
## 165                                          13-Sep 2013
## 166                                          13-Sep 2013
## 167                                          13-Sep 2013
## 168                                          13-Nov 2013
## 169                                          13-Nov 2013
## 170                                          14-Jan 2014
## 171                                          14-Jan 2014
## 172                                          14-Jan 2014
## 173                                          15-Jan 2015
##     Years.since.joining   Honorary Death1 Return1 Death2 Return2 Death3
## 1                    52       Full    YES      NO
## 2                    52       Full    YES     YES
## 3                    52       Full    YES     YES
## 4                    52       Full    YES     YES
## 5                    52       Full    YES     YES    YES      NO
## 6                    52   Honorary     NO
## 7                    51       Full    YES     YES
## 8                    50       Full    YES     YES    YES     YES
## 9                    50       Full    YES     YES
## 10                   50       Full    YES     YES
## 11                   50       Full    YES     YES
## 12                   48       Full     NO
## 13                   47       Full     NO
## 14                   47       Full    YES     YES
## 15                   46       Full     NO
## 16                   42       Full    YES     YES
## 17                   42       Full    YES     YES
## 18                   39       Full     NO
## 19                   39       Full    YES     YES    YES     YES
## 20                   39       Full    YES     YES
## 21                   40       Full    YES     YES    YES      NO
## 22                   37       Full    YES      NO
## 23                   36       Full    YES     YES
## 24                   37   Honorary     NO
## 25                   37   Honorary     NO
## 26                   37   Honorary     NO
## 27                   37   Honorary     NO
## 28                   37   Honorary     NO
## 29                   37   Honorary     NO
## 30                   37       Full    YES     YES    YES     YES    YES
## 31                   36       Full     NO
## 32                   36       Full     NO
## 33                   27       Full    YES     YES    YES     YES    YES
## 34                   34       Full     NO
## 35                   33       Full    YES     YES
## 36                   32       Full     NO
## 37                   31       Full     NO
## 38                   31       Full     NO
## 39                   31       Full    YES     YES
## 40                   22   Honorary    YES      NO
## 41                   29       Full    YES     YES
```

```
## 42                28        Full   NO
## 43                27        Full   NO
## 44                26        Full   NO
## 45                26        Full  YES   YES
## 46                24        Full   NO
## 47                23        Full   NO
## 48                23        Full  YES   YES
## 49                22        Full   NO
## 50                30        Full  YES   YES
## 51                12        Full  YES   YES
## 52                28    Honorary  YES   YES  YES  YES
## 53                28        Full  YES   YES  YES  YES
## 54                27        Full  YES   YES  YES   NO
## 55                27    Honorary  YES   YES
## 56                27        Full  YES   YES  YES   NO
## 57                26        Full  YES   YES
## 58                26        Full   NO
## 59                26        Full   NO
## 60                26        Full  YES   YES
## 61                26        Full   NO
## 62                26        Full  YES    NO
## 63                26        Full  YES   YES
## 64                26        Full   NO
## 65                26        Full   NO
## 66                10        Full   NO
## 67                10        Full   NO
## 68                10        Full  YES    NO
## 69                10        Full  YES    NO
## 70                10        Full   NO
## 71                 8        Full  YES    NO
## 72                 6        Full   NO
## 73                25        Full   NO
## 74                25        Full  YES   YES  YES  YES
## 75                25        Full   NO
## 76               115 Probationary  NO
## 77               115 Probationary YES   YES   NO
## 78                23        Full   NO
## 79                23        Full  YES   YES  YES   NO
## 80                23    Honorary   NO
## 81                22    Honorary   NO
## 82                22    Honorary  YES   YES  YES   NO
## 83                19        Full  YES    NO
## 84                19    Honorary  YES    NO
## 85                17        Full   NO
## 86                17        Full   NO
## 87                15        Full   NO
## 88                15        Full   NO
## 89                14        Full  YES   YES  YES  YES
## 90                11        Full   NO
## 91                10        Full   NO
## 92                10        Full  YES    NO
## 93                10        Full  YES    NO
## 94                10        Full  YES   YES
## 95                10        Full  YES   YES  YES   NO
```

```
## 96              10       Full     NO
## 97              10       Full     NO
## 98              10       Full     NO
## 99              10       Full     NO
## 100             10       Full     YES      YES
## 101             10       Full     NO
## 102              9       Full     YES       NO
## 103              9       Full     NO
## 104              8       Full     NO
## 105              8       Full     NO
## 106              8       Full     YES      YES     YES       NO
## 107              7       Full     NO
## 108              7       Full     NO
## 109              5       Full     NO
## 110              6       Full     NO
## 111              5       Full     NO
## 112              5       Full     NO
## 113              5       Full     YES      YES
## 114              5       Full     YES       NO
## 115              5       Full     NO
## 116              5       Full     YES       NO
## 117              5       Full     NO
## 118              5       Full     YES       NO
## 119              5       Full     NO
## 120              4       Full     YES      YES
## 121              5       Full     NO
## 122              4       Full     NO
## 123            115   Academy     NO
## 124            115   Academy     NO
## 125              5   Academy     NO
## 126            115   Academy     NO
## 127              5   Academy     NO
## 128            115   Academy     NO
## 129            115   Academy     NO
## 130            115   Academy     NO
## 131              5   Academy     YES       NO
## 132              5   Academy     YES       NO
## 133            115   Academy     NO
## 134            115   Academy     NO
## 135            115   Academy     NO
## 136              5   Academy     NO
## 137            115   Academy     NO
## 138            115   Academy     NO
## 139            115   Academy     NO
## 140              3       Full     NO
## 141              3       Full     NO
## 142              4       Full     NO
## 143              3   Honorary    NO
## 144              2       Full     YES       NO
## 145              3       Full     NO
## 146              2       Full     NO
## 147              2       Full     NO
## 148              2       Full     NO
## 149              2       Full     NO
```

13

```
## 150                         2      Full     NO
## 151                         2      Full     YES        NO
## 152                         2      Full     NO
## 153                         2      Full     YES       YES
## 154                         2      Full     YES        NO
## 155                         2      Full     YES        NO
## 156                         2      Full     YES        NO
## 157                         2      Full     YES        NO
## 158                         0  Honorary     NO
## 159                         2      Full     NO
## 160                         2      Full     NO
## 161                         2      Full     NO
## 162                         2      Full     NO
## 163                         2      Full     NO
## 164                         2      Full     NO
## 165                         2      Full     YES       YES
## 166                         2      Full     NO
## 167                         2      Full     NO
## 168                         2      Full     NO
## 169                         2      Full     NO
## 170                         1      Full     NO
## 171                         1      Full     NO
## 172                         1      Full     NO
## 173                         0      Full     NO
##      Return3 Death4 Return4 Death5 Return5
## 1
## 2
## 3
## 4
## 5
## 6
## 7
## 8
## 9
## 10
## 11
## 12
## 13
## 14
## 15
## 16
## 17
## 18
## 19
## 20
## 21
## 22
## 23
## 24
## 25
## 26
## 27
## 28
## 29
```

```
## 30          NO
## 31
## 32
## 33          YES     YES      YES     YES      YES
## 34
## 35
## 36
## 37
## 38
## 39
## 40
## 41
## 42
## 43
## 44
## 45
## 46
## 47
## 48
## 49
## 50
## 51
## 52
## 53
## 54
## 55
## 56
## 57
## 58
## 59
## 60
## 61
## 62
## 63
## 64
## 65
## 66
## 67
## 68
## 69
## 70
## 71
## 72
## 73
## 74
## 75
## 76
## 77
## 78
## 79
## 80
## 81
## 82
## 83
```

```
## 84
## 85
## 86
## 87
## 88
## 89
## 90
## 91
## 92
## 93
## 94
## 95
## 96
## 97
## 98
## 99
## 100
## 101
## 102
## 103
## 104
## 105
## 106
## 107
## 108
## 109
## 110
## 111
## 112
## 113
## 114
## 115
## 116
## 117
## 118
## 119
## 120
## 121
## 122
## 123
## 124
## 125
## 126
## 127
## 128
## 129
## 130
## 131
## 132
## 133
## 134
## 135
## 136
## 137
```

```
## 138
## 139
## 140
## 141
## 142
## 143
## 144
## 145
## 146
## 147
## 148
## 149
## 150
## 151
## 152
## 153
## 154
## 155
## 156
## 157
## 158
## 159
## 160
## 161
## 162
## 163
## 164
## 165
## 166
## 167
## 168
## 169
## 170
## 171
## 172
## 173
##
## 1
## 2
## 3                                                                              Death: "Later wl
## 4
## 5
## 6
## 7
## 8
## 9
## 10
## 11
## 12
## 13
## 14
## 15
## 16
## 17
```

```
## 18
## 19                                                                                    Dies in Def
## 20
## 21
## 22
## 23
## 24
## 25
## 26
## 27
## 28
## 29
## 30  The bad penny of the Marvel universe. First killed in Secret invasion. Revived during the Chaos
## 31
## 32
## 33    From her article: Death1: "Defeated Ultron and reversed the process leaving Jocasta a mindless
## 34
## 35
## 36
## 37
## 38
## 39
## 40
## 41
## 42
## 43
## 44
## 45
## 46
## 47
## 48
## 49
## 50
## 51                                                                              Died in Avenge
## 52                                                   Shot with a Breathing gun and corps
## 53                                                             Killed by Namor with
## 54
## 55
## 56
## 57
## 58
## 59
## 60
## 61
## 62
## 63
## 64
## 65                                                             Christ; where t
## 66
## 67
## 68
## 69
## 70
## 71
```

```
## 72
## 73
## 74                           Since joining the New Avengers: First death Kille
## 75
## 76
## 77
## 78
## 79                                                    Became posessed
## 80
## 81
## 82
## 83
## 84
## 85
## 86
## 87
## 88
## 89                                          First died in a zero energy expl
## 90
## 91
## 92
## 93
## 94
## 95                                                   First death 'I
## 96
## 97
## 98
## 99
## 100
## 101
## 102
## 103
## 104
## 105
## 106
## 107
## 108
## 109
## 110
## 111
## 112
## 113
## 114
## 115
## 116
## 117
## 118
## 119
## 120
## 121
## 122
## 123
## 124
## 125
```

```
## 126
## 127
## 128
## 129
## 130
## 131
## 132
## 133
## 134
## 135
## 136
## 137
## 138
## 139
## 140
## 141
## 142
## 143
## 144
## 145
## 146
## 147
## 148
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## 150
## 151
## 152
## 153
## 154
## 155
## 156
## 157
## 158
## 159
## 160
## 161
## 162
## 163
## 164
## 165
## 166
## 167
## 168
## 169
## 170
## 171
## 172
## 173
```

#Overall analysis of the data

```
avengers_df %>% str
```

```
## 'data.frame':    173 obs. of  21 variables:
##  $ URL                      : Factor w/ 173 levels "http://marvel.wikia.com/2ZP45-9-X-51_(Earth-610
```

```
##  $ Name.Alias              : Factor w/ 163 levels "","\"Giulietta Nefaria\"",..: 62 72 13 128 147
##  $ Appearances             : int  1269 1165 3068 2089 2402 612 3458 1456 769 1214 ...
##  $ Current.                : Factor w/ 2 levels "NO","YES": 2 2 2 2 2 2 2 2 2 2 ...
##  $ Gender                  : Factor w/ 2 levels "FEMALE","MALE": 2 1 2 2 2 2 2 2 2 1 ...
##  $ Probationary.Introl     : Factor w/ 13 levels "","Apr-77","Aug-91",..: 1 1 1 1 1 1 1 1 1 1 ...
##  $ Full.Reserve.Avengers.Intro: Factor w/ 94 levels "","1-Aug","10-Aug",..: 88 88 88 88 88 88 71 73 ...
##  $ Year                    : int  1963 1963 1963 1963 1963 1963 1964 1965 1965 1965 ...
##  $ Years.since.joining     : int  52 52 52 52 52 52 51 50 50 50 ...
##  $ Honorary                : Factor w/ 4 levels "Academy","Full",..: 2 2 2 2 2 3 2 2 2 2 ...
##  $ Death1                  : Factor w/ 2 levels "NO","YES": 2 2 2 2 2 1 2 2 2 2 ...
##  $ Return1                 : Factor w/ 3 levels "","NO","YES": 2 3 3 3 3 1 3 3 3 3 ...
##  $ Death2                  : Factor w/ 3 levels "","NO","YES": 1 1 1 1 3 1 1 3 1 1 ...
##  $ Return2                 : Factor w/ 3 levels "","NO","YES": 1 1 1 1 2 1 1 3 1 1 ...
##  $ Death3                  : Factor w/ 2 levels "","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Return3                 : Factor w/ 3 levels "","NO","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Death4                  : Factor w/ 2 levels "","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Return4                 : Factor w/ 2 levels "","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Death5                  : Factor w/ 2 levels "","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Return5                 : Factor w/ 2 levels "","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Notes                   : Factor w/ 71 levels " Reduced her to a pile of bones and organsby V:
```

```
avengers_df %>% summary()
```

```
##                                                 URL
##  http://marvel.wikia.com/2ZP45-9-X-51_(Earth-616)#      :  1
##  http://marvel.wikia.com/Abyss_(Ex_Nihilo%27s)_(Earth-616)#:  1
##  http://marvel.wikia.com/Adam_Brashear_(Earth-616)#     :  1
##  http://marvel.wikia.com/Alani_Ryan_(Earth-616)#        :  1
##  http://marvel.wikia.com/Alexander_Summers_(Earth-616)# :  1
##  http://marvel.wikia.com/Alexis_(Earth-616)#            :  1
##  (Other)                                                :167
##               Name.Alias   Appearances    Current.    Gender
##                     : 10   Min.   :   2.0  NO :91   FEMALE: 58
##  Vance Astrovik     :  2   1st Qu.:  58.0  YES:82   MALE  :115
##  "Giulietta Nefaria":  1   Median :  132.0
##  Adam               :  1   Mean   :  414.1
##  Adam Brashear      :  1   3rd Qu.:  491.0
##  Alani Ryan         :  1   Max.   : 4333.0
##  (Other)            :157
##  Probationary.Introl Full.Reserve.Avengers.Intro     Year
##         :158                  : 14             Min.   :1900
##  Apr-77 :  2         10-Aug :  6               1st Qu.:1979
##  Feb-91 :  2         10-May :  6               Median :1996
##  Jul-75 :  2         13-Feb :  6               Mean   :1988
##  Aug-91 :  1         Feb-78 :  6               3rd Qu.:2010
##  Jan-83 :  1         Sep-63 :  6               Max.   :2015
##  (Other):  7         (Other):129
##  Years.since.joining         Honorary   Death1    Return1   Death2
##  Min.   :  0.00     Academy    : 17   NO :104      :104        :156
##  1st Qu.:  5.00     Full       :138   YES: 69   NO : 23    NO : 1
##  Median : 19.00     Honorary   : 16             YES: 46    YES: 16
##  Mean   : 26.55     Probationary:  2
##  3rd Qu.: 36.00
##  Max.   :115.00
##
```

```
## Return2   Death3    Return3   Death4    Return4   Death5    Return5
##     :157      :171      :171     :172      :172     :172      :172
## NO : 8   YES: 2   NO : 1   YES: 1   YES: 1   YES: 1   YES: 1
## YES: 8            YES: 1
##
##
##
##
##
## Died in New_Avengers_Vol_3_32
## Died in Murderworld during Avengers Arena
##  Reduced her to a pile of bones and organsby Vargas. Brought back by Chaos King. Died second time in
## Accidently killed by Zaran
## Became posessed died to purge self of corruption. Revived as undead Avenger minion of the Grim Reap
## (Other)
## NA's
```

Some columns have inadequate typing.URL,Name.Alias and Notes should be string. Converting them:
#Probationary.Introl and Full.Reserve are month-year dates

```r
avengers_df$URL <-  as.character(avengers_df$URL)
avengers_df$Name.Alias <-  as.character(avengers_df$Name.Alias)
avengers_df$Notes <-  as.character(avengers_df$Notes)
#avengers_df$Probationary.Introl <- as.Date(avengers_df$Probationary.Introl, format = "%b-%y")
avengers_df %>% str
```

```
## 'data.frame':    173 obs. of  21 variables:
##  $ URL                     : chr  "http://marvel.wikia.com/Henry_Pym_(Earth-616)" "http://marvel.w
##  $ Name.Alias              : chr  "Henry Jonathan \"Hank\" Pym" "Janet van Dyne" "Anthony Edward \
##  $ Appearances             : int  1269 1165 3068 2089 2402 612 3458 1456 769 1214 ...
##  $ Current.                : Factor w/ 2 levels "NO","YES": 2 2 2 2 2 2 2 2 2 2 ...
##  $ Gender                  : Factor w/ 2 levels "FEMALE","MALE": 2 1 2 2 2 2 2 2 2 1 ...
##  $ Probationary.Introl     : Factor w/ 13 levels "","Apr-77","Aug-91",..: 1 1 1 1 1 1 1 1 1 1 ...
##  $ Full.Reserve.Avengers.Intro: Factor w/ 94 levels "","1-Aug","10-Aug",..: 88 88 88 88 88 88 71 73 7
##  $ Year                    : int  1963 1963 1963 1963 1963 1963 1964 1965 1965 1965 ...
##  $ Years.since.joining      : int  52 52 52 52 52 52 51 50 50 50 ...
##  $ Honorary                : Factor w/ 4 levels "Academy","Full",..: 2 2 2 2 2 3 2 2 2 2 ...
##  $ Death1                  : Factor w/ 2 levels "NO","YES": 2 2 2 2 2 1 2 2 2 2 ...
##  $ Return1                 : Factor w/ 3 levels "","NO","YES": 2 3 3 3 3 1 3 3 3 3 ...
##  $ Death2                  : Factor w/ 3 levels "","NO","YES": 1 1 1 1 3 1 1 3 1 1 ...
##  $ Return2                 : Factor w/ 3 levels "","NO","YES": 1 1 1 1 2 1 1 3 1 1 ...
##  $ Death3                  : Factor w/ 2 levels "","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Return3                 : Factor w/ 3 levels "","NO","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Death4                  : Factor w/ 2 levels "","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Return4                 : Factor w/ 2 levels "","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Death5                  : Factor w/ 2 levels "","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Return5                 : Factor w/ 2 levels "","YES": 1 1 1 1 1 1 1 1 1 1 ...
##  $ Notes                   : chr  "Merged with Ultron in Rage of Ultron Vol. 1. A funeral was hel
```

#Converting to Tidy data

The dataframe contains five columns that register if the Avenger has died. Each column represents their first, second, third, fourth and fifth deaths. Similarly. there are also five columns that represent if the Avenger has revived. These 10 columns simply contain YES or NO values.

There is no information of when the Avenger has died. In fact, the dataframe is essentially a list of all Avengers that have existed. Therefore, converting each death into different rows does not make sense.

Instead, to make the number of deaths and revivals simpler, we will simply convert the number of YES values for each into an integer.

```r
library(tidyverse)

avengers_tidydf <- avengers_df %>%
  mutate(Total.Deaths = avengers_df %>% select(Death1,Death2,Death3,Death4,Death5) %>% apply(1, function
  mutate(Total.Return = avengers_df %>% select(Return1,Return2,Return3,Return4,Return5) %>% apply(1, fu
  subset(select=-c(Death1,Death2,Death3,Death4,Death5,Return1,Return2,Return3,Return4,Return5))
avengers_tidydf
```

```
##                                                               URL
## 1                    http://marvel.wikia.com/Henry_Pym_(Earth-616)
## 2                http://marvel.wikia.com/Janet_van_Dyne_(Earth-616)
## 3                 http://marvel.wikia.com/Anthony_Stark_(Earth-616)
## 4           http://marvel.wikia.com/Robert_Bruce_Banner_(Earth-616)
## 5                 http://marvel.wikia.com/Thor_Odinson_(Earth-616)
## 6                 http://marvel.wikia.com/Richard_Jones_(Earth-616)
## 7                 http://marvel.wikia.com/Steven_Rogers_(Earth-616)
## 8                 http://marvel.wikia.com/Clint_Barton_(Earth-616)
## 9               http://marvel.wikia.com/Pietro_Maximoff_(Earth-616)
## 10               http://marvel.wikia.com/Wanda_Maximoff_(Earth-616)
## 11              http://marvel.wikia.com/Jacques_Duquesne_(Earth-616)
## 12                    http://marvel.wikia.com/Hercules_(Earth-616)
## 13                  http://marvel.wikia.com/T%27Challa_(Earth-616)
## 14                      http://marvel.wikia.com/Vision_(Earth-616)
## 15                           http://marvel.wikia.com/Dane_Whitman
## 16           http://marvel.wikia.com/Natalia_Romanova_(Earth-616)#
## 17                     http://marvel.wikia.com/Mantis_(Earth-616)#
## 18                http://marvel.wikia.com/Henry_McCoy_(Earth-616)#
## 19           http://marvel.wikia.com/Heather_Douglas_(Earth-616)#
## 20           http://marvel.wikia.com/Patricia_Walker_(Earth-616)#
## 21              http://marvel.wikia.com/Matthew_Hawk_(Earth-616)#
## 22               http://marvel.wikia.com/Robert_Frank_(Earth-616)#
## 23             http://marvel.wikia.com/Simon_Williams_(Earth-616)#
## 24              http://marvel.wikia.com/Yondu_Udonta_(Earth-691)#
## 25           http://marvel.wikia.com/Martinex_T%27Naga_(Earth-691)#
## 26                  http://marvel.wikia.com/Charlie-27_(Earth-691)#
## 27           http://marvel.wikia.com/Nicholette_Gold_(Earth-691)#
## 28              http://marvel.wikia.com/Stakar_Ogord_(Earth-691)#
## 29               http://marvel.wikia.com/Vance_Astro_(Earth-691)#
## 30                   http://marvel.wikia.com/Mar-Vell_(Earth-616)#
## 31              http://marvel.wikia.com/Carol_Danvers_(Earth-616)#
## 32              http://marvel.wikia.com/Samuel_Wilson_(Earth-616)#
## 33                    http://marvel.wikia.com/Jocasta_(Earth-616)#
## 34               http://marvel.wikia.com/Greer_Nelson_(Earth-616)#
## 35           http://marvel.wikia.com/Jennifer_Walters_(Earth-616)#
## 36             http://marvel.wikia.com/Monica_Rambeau_(Earth-616)#
## 37                        http://marvel.wikia.com/Eros_(Earth-616)#
## 38               http://marvel.wikia.com/James_Rhodes_(Earth-616)#
## 39              http://marvel.wikia.com/Barbara_Morse_(Earth-616)#
## 40              http://marvel.wikia.com/Moira_Brandon_(Earth-616)#
## 41             http://marvel.wikia.com/Benjamin_Grimm_(Earth-616)#
## 42              http://marvel.wikia.com/Bonita_Juarez_(Earth-616)#
## 43               http://marvel.wikia.com/Marc_Spector_(Earth-616)#
```

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## 44                        http://marvel.wikia.com/John_Walker_(Earth-616)#
## 45             http://marvel.wikia.com/Human_Torch_(Android)_(Earth-616)#
## 46                      http://marvel.wikia.com/Miguel_Santos_(Earth-616)#
## 47                     http://marvel.wikia.com/Julia_Carpenter_(Earth-616)#
## 48                        http://marvel.wikia.com/2ZP45-9-X-51_(Earth-616)#
## 49                        http://marvel.wikia.com/Chris_Powell_(Earth-616)#
## 50                     http://marvel.wikia.com/Namor_McKenzie_(Earth-616)#
## 51                          http://marvel.wikia.com/Scott_Lang_(Earth-616)#
## 52                     http://marvel.wikia.com/Anthony_Druid_(Earth-616)#
## 53               http://marvel.wikia.com/Marrina_Smallwood_(Earth-616)#
## 54              http://marvel.wikia.com/Ravonna_Renslayer_(Earth-6311)#
## 55                        http://marvel.wikia.com/Rita_DeMara_(Earth-616)#
## 56                     http://marvel.wikia.com/Dennis_Dunphy_(Earth-616)#
## 57                          http://marvel.wikia.com/Gilgamesh_(Earth-616)#
## 58                     http://marvel.wikia.com/Reed_Richards_(Earth-616)#
## 59                       http://marvel.wikia.com/Susan_Storm_(Earth-616)#
## 60                    http://marvel.wikia.com/Wendell_Vaughn_(Earth-616)#
## 61                   http://marvel.wikia.com/Ashley_Crawford_(Earth-616)#
## 62                        http://marvel.wikia.com/Dinah_Soar_(Earth-616)#
## 63                      http://marvel.wikia.com/DeMarr_Davis_(Earth-616)#
## 64                       http://marvel.wikia.com/Val_Ventura_(Earth-616)#
## 65                      http://marvel.wikia.com/Craig_Hollis_(Earth-616)#
## 66                      http://marvel.wikia.com/Gene_Lorrene_(Earth-616)#
## 67                      http://marvel.wikia.com/Doreen_Green_(Earth-616)#
## 68                        http://marvel.wikia.com/Monkey_Joe_(Earth-616)#
## 69                      http://marvel.wikia.com/Doug_Taggert_(Earth-616)#
## 70                         http://marvel.wikia.com/Tippy-Toe_(Earth-616)#
## 71                       http://marvel.wikia.com/Wade_Wilson_(Earth-616)#
## 72                       http://marvel.wikia.com/Greg_Willis_(Earth-616)#
## 73                             http://marvel.wikia.com/Sersi_(Earth-616)#
## 74                      http://marvel.wikia.com/Peter_Parker_(Earth-616)#
## 75                     http://marvel.wikia.com/Walter_Newell_(Earth-616)#
## 76                     http://marvel.wikia.com/Elvin_Haliday_(Earth-616)#
## 77                     http://marvel.wikia.com/William_Baker_(Earth-616)#
## 78             http://marvel.wikia.com/Crystalia_Amaquelin_(Earth-616)#
## 79                   http://marvel.wikia.com/Eric_Masterson_(Earth-616)#
## 80                     http://marvel.wikia.com/Philip_Javert_(Earth-921)#
## 81                   http://marvel.wikia.com/Melissa_Darrow_(Earth-9201)#
## 82                          http://marvel.wikia.com/Deathcry_(Earth-616)#
## 83                   http://marvel.wikia.com/Anthony_Stark_(Earth-96020)#
## 84        http://marvel.wikia.com/Giuletta_Nefaria_(Masque)_(Earth-616)#
## 85                    http://marvel.wikia.com/Vance_Astrovik_(Earth-616)#
## 86                    http://marvel.wikia.com/Angelica_Jones_(Earth-616)#
## 87               http://marvel.wikia.com/Delroy_Garrett_Jr._(Earth-616)#
## 88    http://marvel.wikia.com/Maria_de_Guadalupe_Santiago_(Earth-616)#
## 89                    http://marvel.wikia.com/Jonathan_Hart_(Earth-616)#
## 90                      http://marvel.wikia.com/Kelsey_Leigh_(Earth-616)#
## 91                         http://marvel.wikia.com/Luke_Cage_(Earth-616)#
## 92                            http://marvel.wikia.com/Veranke_(Earth-616)#
## 93                     http://marvel.wikia.com/James_Howlett_(Earth-616)#
## 94                   http://marvel.wikia.com/Robert_Reynolds_(Earth-616)#
## 95                        http://marvel.wikia.com/Maya_Lopez_(Earth-616)#
## 96  http://marvel.wikia.com/Nathaniel_Richards_(Iron_Lad)_(Earth-6311)#
## 97                     http://marvel.wikia.com/Elijah_Bradley_(Earth-616)#
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## 98                         http://marvel.wikia.com/William_Kaplan_(Earth-616)#
## 99                           http://marvel.wikia.com/Dorrek_VIII_(Earth-616)#
## 100                       http://marvel.wikia.com/Cassandra_Lang_(Earth-616)#
## 101                     http://marvel.wikia.com/Katherine_Bishop_(Earth-616)#
## 102                    http://marvel.wikia.com/Vision_(Jonas)_(Earth-616)#
## 103                     http://marvel.wikia.com/Thomas_Shepherd_(Earth-616)#
## 104                         http://marvel.wikia.com/Daniel_Rand_(Earth-616)#
## 105                      http://marvel.wikia.com/Stephen_Strange_(Earth-616)#
## 106                                 http://marvel.wikia.com/Ares_(Earth-616)#
## 107          http://marvel.wikia.com/James_Buchanan_Barnes_(Earth-616)#
## 108                       http://marvel.wikia.com/Jessica_Drew_(Earth-616)#
## 109                      http://marvel.wikia.com/Jessica_Jones_(Earth-616)#
## 110                       http://marvel.wikia.com/Amadeus_Cho_(Earth-616)#
## 111                         http://marvel.wikia.com/Maria_Hill_(Earth-616)#
## 112                     http://marvel.wikia.com/Robert_Baldwin_(Earth-616)#
## 113                      http://marvel.wikia.com/Sharon_Carter_(Earth-616)#
## 114                       http://marvel.wikia.com/Eric_0%27Grady_(Earth-616)#
## 115                        http://marvel.wikia.com/Brunnhilde_(Earth-616)#
## 116                       http://marvel.wikia.com/Richard_Rider_(Earth-616)#
## 117                      http://marvel.wikia.com/Brian_Braddock_(Earth-616)#
## 118                       http://marvel.wikia.com/Dennis_Sykes_(Earth-616)#
## 119                          http://marvel.wikia.com/Noh-Varr_(Earth-616)#
## 120                      http://marvel.wikia.com/Thaddeus_Ross_(Earth-616)#
## 121                         http://marvel.wikia.com/John_Aman_(Earth-616)#
## 122                         http://marvel.wikia.com/Shang-Chi_(Earth-616)#
## 123                      http://marvel.wikia.com/James_Santini_(Earth-616)#
## 124                       http://marvel.wikia.com/Emery_Schaub_(Earth-616)#
## 125                     http://marvel.wikia.com/Jeanne_Foucault_(Earth-616)#
## 126                    http://marvel.wikia.com/Fiona_(Inhuman)_(Earth-616)#
## 127                    http://marvel.wikia.com/Jennifer_Takeda_(Earth-616)#
## 128                             http://marvel.wikia.com/Hollow_(Earth-616)#
## 129                        http://marvel.wikia.com/Julie_Power_(Earth-616)#
## 130                         http://marvel.wikia.com/Alani_Ryan_(Earth-616)#
## 131                           http://marvel.wikia.com/Ken_Mack_(Earth-616)#
## 132                     http://marvel.wikia.com/Humberto_Lopez_(Earth-616)#
## 133                    http://marvel.wikia.com/Johnathon_Gallo_(Earth-616)#
## 134                             http://marvel.wikia.com/Lyra_(Earth-8009)#
## 135                       http://marvel.wikia.com/Anya_Corazon_(Earth-616)#
## 136                     http://marvel.wikia.com/Brandon_Sharpe_(Earth-616)#
## 137                    http://marvel.wikia.com/Kevin_Masterson_(Earth-616)#
## 138                    http://marvel.wikia.com/Michiko_Musashi_(Earth-616)#
## 139                    http://marvel.wikia.com/Takashi_Matsuya_(Earth-616)#
## 140                      http://marvel.wikia.com/Daisy_Johnson_(Earth-616)#
## 141                       http://marvel.wikia.com/Ororo_Munroe_(Earth-616)#
## 142                     http://marvel.wikia.com/Matthew_Murdock_(Earth-616)#
## 143                    http://marvel.wikia.com/Eugene_Thompson_(Earth-616)#
## 144                     http://marvel.wikia.com/Otto_Octavius_(Earth-616)#
## 145          http://marvel.wikia.com/Alexander_Summers_(Earth-616)#
## 146                      http://marvel.wikia.com/Samuel_Guthrie_(Earth-616)#
## 147                    http://marvel.wikia.com/Roberto_da_Costa_(Earth-616)#
## 148                          http://marvel.wikia.com/Eden_Fesi_(Earth-616)#
## 149                    http://marvel.wikia.com/Captain_Universe_(Earth-616)#
## 150                        http://marvel.wikia.com/Isabel_Kane_(Earth-616)#
## 151                    http://marvel.wikia.com/Marcus_Milton_(Earth-13034)#
```

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## 152                    http://marvel.wikia.com/Rogue_(Anna_Marie)_(Earth-616)#
## 153                     http://marvel.wikia.com/Shiro_Yoshida_(Earth-616)#
## 154                       http://marvel.wikia.com/Ex_Nihilo_(Earth-616)#
## 155          http://marvel.wikia.com/Abyss_(Ex_Nihilo%27s)_(Earth-616)#
## 156                       http://marvel.wikia.com/Nightmask_(Earth-616)#
## 157                     http://marvel.wikia.com/Kevin_Connor_(Earth-616)#
## 158                     http://marvel.wikia.com/Sam_Alexander_(Earth-616)#
## 159                   http://marvel.wikia.com/America_Chavez_(Earth-616)#
## 160          http://marvel.wikia.com/Loki_Laufeyson_(Ikol)_(Earth-616)#
## 161                    http://marvel.wikia.com/David_Alleyne_(Earth-616)#
## 162                http://marvel.wikia.com/Nicholas_Fury,_Jr._(Earth-616)#
## 163                  http://marvel.wikia.com/Phillip_Coulson_(Earth-616)#
## 164                      http://marvel.wikia.com/Tony_Masters_(Earth-616)#
## 165                     http://marvel.wikia.com/Victor_Mancha_(Earth-616)#
## 166                     http://marvel.wikia.com/Monica_Chang_(Earth-616)#
## 167               http://marvel.wikia.com/Doombot_(Avenger)_(Earth-616)#
## 168                           http://marvel.wikia.com/Alexis_(Earth-616)#
## 169                      http://marvel.wikia.com/Eric_Brooks_(Earth-616)#
## 170                    http://marvel.wikia.com/Adam_Brashear_(Earth-616)#
## 171                    http://marvel.wikia.com/Victor_Alvarez_(Earth-616)#
## 172                        http://marvel.wikia.com/Ava_Ayala_(Earth-616)#
## 173                           http://marvel.wikia.com/Kaluu_(Earth-616)#
##                              Name.Alias Appearances Current. Gender
## 1         Henry Jonathan "Hank" Pym        1269      YES   MALE
## 2                   Janet van Dyne        1165      YES FEMALE
## 3         Anthony Edward "Tony" Stark     3068      YES   MALE
## 4               Robert Bruce Banner      2089      YES   MALE
## 5                     Thor Odinson      2402      YES   MALE
## 6           Richard Milhouse Jones       612      YES   MALE
## 7                    Steven Rogers      3458      YES   MALE
## 8            Clinton Francis Barton     1456      YES   MALE
## 9                 Pietro Maximoff       769      YES   MALE
## 10                Wanda Maximoff      1214      YES FEMALE
## 11             Jacques Duquesne       115       NO   MALE
## 12                     Heracles       741      YES   MALE
## 13                     T'Challa       780       NO   MALE
## 14           Victor Shade (alias)     1036      YES   MALE
## 15                Dane Whitman        482       NO   MALE
## 16     Natalia Alianovna Romanova     1112      YES FEMALE
## 17                      Brandt        160       NO FEMALE
## 18               Henry P. McCoy       1886      NO   MALE
## 19              Heather Douglas        332       NO FEMALE
## 20                Patsy Walker        557       NO FEMALE
## 21   Matthew Liebowitz (birth name)     197       NO   MALE
## 22          Robert L. Frank Sr.        106       NO   MALE
## 23             Simon Williams        692      YES   MALE
## 24              Yondu Udonta        109       NO   MALE
## 25           Martinex T'Naga        100       NO   MALE
## 26                 Charlie-27        132       NO   MALE
## 27            Nicholette Gold        108       NO FEMALE
## 28                     Stakar        100       NO   MALE
## 29             Vance Astrovik        156       NO   MALE
## 30                    Mar-Vell        254       NO   MALE
## 31      Carol Susan Jane Danvers       935      YES FEMALE
```

```
## 32           Samuel Thomas Wilson      576   YES   MALE
## 33                       Jocasta        141   YES FEMALE
## 34           Greer Grant Nelson        355   YES FEMALE
## 35           Jennifer Walters          933   YES FEMALE
## 36           Monica Rambeau            348   YES FEMALE
## 37                         Eros         206    NO   MALE
## 38            James R. Rhodes          533    NO   MALE
## 39    Barbara Barton (nee Morse)      374    NO FEMALE
## 40             Moira Brandon            2     NO FEMALE
## 41         Benjamin Jacob Grimm       2305    NO   MALE
## 42               Bonita Juarez         83     NO FEMALE
## 43               Marc Spector         402     NO   MALE
## 44              John F. Walker        352     NO   MALE
## 45          Jim Hammond (alias)       565     NO   MALE
## 46              Miguel Santos         112     NO   MALE
## 47             Julia Carpenter        218     NO FEMALE
## 48                        X-51        149     NO   MALE
## 49          Christopher Powell        168     NO   MALE
## 50             Namor McKenzie       1561     NO   MALE
## 51      Scott Edward Harris Lang      217     NO   MALE
## 52        Anthony Ludgate Druid       158     NO   MALE
## 53          Marrina Smallwood         86     NO FEMALE
## 54      Ravonna Lexus Renslayer        41     NO FEMALE
## 55               Rita DeMara          68     NO FEMALE
## 56              Dennis Dunphy         70     NO   MALE
## 57                                     61     NO   MALE
## 58               Reed Richards      2125    YES   MALE
## 59    Susan Richards (nee Storm)     1761    NO   MALE
## 60        Wendell Elvis Vaughn       293     NO   MALE
## 61             Ashley Crawford        36    YES FEMALE
## 62                                     22     NO FEMALE
## 63                DeMarr Davis        31    YES   MALE
## 64                Val Ventura        34    YES   MALE
## 65                Craig Hollis       33    YES   MALE
## 66                Gene Lorrene        4     NO   MALE
## 67                Dorreen Green       47     NO FEMALE
## 68                                      7     NO   MALE
## 69                Doug Taggert        3     NO   MALE
## 70                                     16     NO FEMALE
## 71                 Wade Wilson       575     NO   MALE
## 72                 Greg Willis       58     NO   MALE
## 73                        Circe      237     NO FEMALE
## 74      Peter Benjamin Parker      4333    YES   MALE
## 75               Walter Newell       126     NO   MALE
## 76               Elvin Haliday      158     NO   MALE
## 77               William Baker      355     NO   MALE
## 78    Crystal Amaquelin Maximoff    517     NO FEMALE
## 79         Eric Kevin Masterson      202     NO   MALE
## 80               Phillip Javert       31     NO   MALE
## 81                                     28     NO FEMALE
## 82                                     50     NO FEMALE
## 83        Anthony Edward Stark        27     NO   MALE
## 84         "Giulietta Nefaria"        18     NO FEMALE
## 85              Vance Astrovik      302     NO   MALE
```

```
## 86                     Angelica Jones    330    NO FEMALE
## 87                 Delroy Garrett Jr.    101    NO   MALE
## 88         Maria de Guadalupe Santiago     43    NO FEMALE
## 89                    Jonathan Hart     126    NO   MALE
## 90                Kelsey Leigh Shorr     24    NO FEMALE
## 91                       Carl Lucas     886   YES   MALE
## 92                          Veranke    159    NO FEMALE
## 93            James "Logan" Howlett    3130   YES   MALE
## 94                  Robert Reynolds    241    NO   MALE
## 95                       Maya Lopez     67    NO FEMALE
## 96               Nathaniel Richards     23    NO   MALE
## 97                   Elijah Bradley    103    NO   MALE
## 98           William "Billy" Kaplan    123   YES   MALE
## 99  Dorrek VIII/Theodore "Teddy" Altman    110   YES   MALE
## 100                     Cassie Lang    160    NO FEMALE
## 101           Katherine "Kate" Bishop    132   YES FEMALE
## 102                    Alias: Jonas    121    NO   MALE
## 103          Thomas "Tommy" Shepherd     59   YES   MALE
## 104            Daniel Thomas Rand K'ai    629    NO   MALE
## 105    Doctor Stephen Vincent Strange    1324    NO   MALE
## 106                            Ares    236    NO   MALE
## 107           James Buchanan Barnes    663    NO   MALE
## 108            Jessica Miriam Drew     525   YES FEMALE
## 109                   Jessica Jones    205   YES FEMALE
## 110                     Amadeus Cho    108    NO   MALE
## 111                      Maria Hill    359   YES FEMALE
## 112                  Robbie Baldwin    299    NO   MALE
## 113                   Sharon Carter    333    NO FEMALE
## 114                   Eric O'Grady     88    NO   MALE
## 115                     Brunnhilde    369    NO FEMALE
## 116                   Richard Rider    380    NO   MALE
## 117                  Brian Braddock    545    NO   MALE
## 118                   Dennis Sykes      6    NO   MALE
## 119                        Noh-Varr    126   YES   MALE
## 120                   Thaddeus Ross    417    NO   MALE
## 121                      John Aman     31   YES   MALE
## 122                       Shang-Chi    310   YES   MALE
## 123                  James Santini     40   YES   MALE
## 124                   Emery Schaub     26   YES   MALE
## 125                 Jeanne Foucault     63   YES FEMALE
## 126                           Fiona      2   YES FEMALE
## 127                 Jennifer Takeda     73   YES FEMALE
## 128                         Yvette     22   YES FEMALE
## 129                     Julie Power    153   YES FEMALE
## 130                      Alani Ryan     73   YES FEMALE
## 131                        Ken Mack     59    NO   MALE
## 132                 Humberto Lopez     66   YES   MALE
## 133                    Johnny Gallo     43   YES   MALE
## 134                            Lyra     55   YES FEMALE
## 135                    Anya Corazon    108   YES FEMALE
## 136                  Brandon Sharpe     64   YES   MALE
## 137                 Kevin Masterson     62   YES   MALE
## 138                 Michiko Musashi     94   YES FEMALE
## 139                    Taki Matsuya     18   YES   MALE
```

```
## 140                        Daisy Johnson    81    NO FEMALE
## 141                        Ororo Munroe   1598    NO FEMALE
## 142                        Matt Murdock   1375    NO   MALE
## 143                       Flash Thompson    746   YES   MALE
## 144                        Otto Octavius    561    NO   MALE
## 145                         Alex Summers    592   YES   MALE
## 146                       Samuel Guthrie    679   YES   MALE
## 147                      Roberto da Costa    491   YES   MALE
## 148                            Eden Fesi     65   YES   MALE
## 149                                         55   YES   MALE
## 150                            Izzy Kane     44   YES FEMALE
## 151                        Marcus Milton     65   YES   MALE
## 152                           Anna Marie    877   YES FEMALE
## 153                        Shiro Yoshida    176   YES   MALE
## 154                                         24   YES   MALE
## 155                                         25   YES FEMALE
## 156                                 Adam     35   YES   MALE
## 157                    Kevin Kale Connor     44   YES   MALE
## 158                        Sam Alexander     78   YES   MALE
## 159                       America Chavez     22   YES FEMALE
## 160                       Loki Laufeyson     77    NO   MALE
## 161                        David Alleyne    115   YES   MALE
## 162 Nicholas Fury, Jr., Marcus Johnson     77   YES   MALE
## 163                       Phillip Coulson    69   YES   MALE
## 164                         Tony Masters    173    NO   MALE
## 165                        Victor Mancha     75   YES   MALE
## 166                         Monica Chang     12   YES FEMALE
## 167                                         14   YES   MALE
## 168                               Alexis     13   YES FEMALE
## 169                          Eric Brooks    198   YES   MALE
## 170                        Adam Brashear     29   YES   MALE
## 171                        Victor Alvarez     45   YES   MALE
## 172                            Ava Ayala     49   YES FEMALE
## 173                                Kaluu     35   YES   MALE
##     Probationary.Introl Full.Reserve.Avengers.Intro Year
## 1                                          Sep-63 1963
## 2                                          Sep-63 1963
## 3                                          Sep-63 1963
## 4                                          Sep-63 1963
## 5                                          Sep-63 1963
## 6                                          Sep-63 1963
## 7                                          Mar-64 1964
## 8                                          May-65 1965
## 9                                          May-65 1965
## 10                                         May-65 1965
## 11                                         Sep-65 1965
## 12                                         Oct-67 1967
## 13                                         May-68 1968
## 14                                         Nov-68 1968
## 15                                         Dec-69 1969
## 16                                         May-73 1973
## 17                                         Aug-73 1973
## 18             Jul-75                      Sep-76 1976
## 19             Jul-75                      Sep-76 1976
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## 20                    Nov-75                      Sep-76 1976
## 21                                                Aug-75 1975
## 22                    Apr-77                      Jul-78 1978
## 23                    Apr-77                      Mar-79 1979
## 24                                                Feb-78 1978
## 25                                                Feb-78 1978
## 26                                                Feb-78 1978
## 27                                                Feb-78 1978
## 28                                                Feb-78 1978
## 29                                                Feb-78 1978
## 30                                                Jul-78 1978
## 31                                                Apr-79 1979
## 32                                                Jun-79 1979
## 33                    Jul-80                      Nov-88 1988
## 34                                                Sep-81 1981
## 35                                                Jul-82 1982
## 36                    Jan-83                      May-83 1983
## 37                    Jun-83                      May-84 1984
## 38                    May-84                      Sep-84 1984
## 39                    Jun-84                      Sep-84 1984
## 40                                                Nov-93 1993
## 41                                                Jun-86 1986
## 42                                                Sep-87 1987
## 43                    Sep-87                      Jun-88 1988
## 44                                                May-89 1989
## 45                                                Nov-89 1989
## 46                                                Apr-91 1991
## 47                                                Sep-92 1992
## 48                                                Jun-92 1992
## 49                                                May-93 1993
## 50                                                Dec-85 1985
## 51                    Jan-87                       3-Feb 2003
## 52                                                Apr-87 1987
## 53                                                Dec-87 1987
## 54                                                May-88 1988
## 55                                                Nov-88 1988
## 56                                                Jan-88 1988
## 57                                                Feb-89 1989
## 58                                                Feb-89 1989
## 59                                                Feb-89 1989
## 60                                                Oct-89 1989
## 61                                                Jul-89 1989
## 62                                                Jul-89 1989
## 63                                                Jul-89 1989
## 64                                                Jul-89 1989
## 65                                                Jul-89 1989
## 66                                                 5-Apr 2005
## 67                                                 5-May 2005
## 68                                                 5-May 2005
## 69                                                 5-May 2005
## 70                                                 5-Jul 2005
## 71                                                 7-Sep 2007
## 72                                                 9-Aug 2009
## 73                                                Feb-90 1990
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## 74                              Apr-90 1990
## 75                              Jul-90 1990
## 76              Feb-91                 1900
## 77              Feb-91                 1900
## 78              Aug-91         Jan-92 1992
## 79                              Jan-92 1992
## 80                              Dec-92 1992
## 81                              Jun-93 1993
## 82                              Jul-93 1993
## 83                              Feb-96 1996
## 84                              Apr-96 1996
## 85                              May-98 1998
## 86                              May-98 1998
## 87                              Apr-00 2000
## 88                              Jul-00 2000
## 89                               1-Aug 2001
## 90                               4-Jun 2004
## 91                               5-Mar 2005
## 92                               5-Mar 2005
## 93                               5-Jun 2005
## 94                               5-Oct 2005
## 95                               5-Nov 2005
## 96                               5-Apr 2005
## 97                               5-Apr 2005
## 98                               5-Apr 2005
## 99                               5-Apr 2005
## 100                              5-Jun 2005
## 101                              5-Jun 2005
## 102                              6-Feb 2006
## 103                              6-Jun 2006
## 104                              7-Feb 2007
## 105                              7-Feb 2007
## 106                              7-Mar 2007
## 107                              8-Dec 2008
## 108                              8-Dec 2008
## 109                             10-Aug 2010
## 110                              9-Dec 2009
## 111                             10-May 2010
## 112                             10-Jun 2010
## 113                             10-May 2010
## 114                             10-May 2010
## 115                             10-May 2010
## 116                             10-May 2010
## 117                             10-May 2010
## 118                             10-Sep 2010
## 119                             10-Jun 2010
## 120                             11-Jun 2011
## 121                             10-Dec 2010
## 122                             11-Apr 2011
## 123                                    1900
## 124                                    1900
## 125                             10-Aug 2010
## 126                                    1900
## 127                             10-Aug 2010
```

```
## 128                                                              1900
## 129                                                              1900
## 130                                                              1900
## 131                                                    10-Aug 2010
## 132                                                    10-Aug 2010
## 133                                                              1900
## 134                                                              1900
## 135                                                              1900
## 136                                                    10-Aug 2010
## 137                                                              1900
## 138                                                              1900
## 139                                                              1900
## 140                                                    12-Jan 2012
## 141                                                    12-Jan 2012
## 142                                                    11-Nov 2011
## 143                                                    12-Apr 2012
## 144                                                    13-Jan 2013
## 145                                                    12-Dec 2012
## 146                                                    13-Feb 2013
## 147                                                    13-Feb 2013
## 148                                                    13-Feb 2013
## 149                                                    13-Feb 2013
## 150                                                    13-Feb 2013
## 151                                                    13-Feb 2013
## 152                                                    13-Apr 2013
## 153                                                    13-May 2013
## 154                                                    13-Oct 2013
## 155                                                    13-Oct 2013
## 156                                                    13-Oct 2013
## 157                                                    13-Oct 2013
## 158                                                    15-Feb 2015
## 159                                                    13-Jul 2013
## 160                                                    13-Jul 2013
## 161                                                    13-Sep 2013
## 162                                                    13-Apr 2013
## 163                                                    13-Apr 2013
## 164                                                    13-May 2013
## 165                                                    13-Sep 2013
## 166                                                    13-Sep 2013
## 167                                                    13-Sep 2013
## 168                                                    13-Nov 2013
## 169                                                    13-Nov 2013
## 170                                                    14-Jan 2014
## 171                                                    14-Jan 2014
## 172                                                    14-Jan 2014
## 173                                                    15-Jan 2015
##     Years.since.joining     Honorary
## 1                    52         Full
## 2                    52         Full
## 3                    52         Full
## 4                    52         Full
## 5                    52         Full
## 6                    52     Honorary
## 7                    51         Full
```

```
## 8                     50          Full
## 9                     50          Full
## 10                    50          Full
## 11                    50          Full
## 12                    48          Full
## 13                    47          Full
## 14                    47          Full
## 15                    46          Full
## 16                    42          Full
## 17                    42          Full
## 18                    39          Full
## 19                    39          Full
## 20                    39          Full
## 21                    40          Full
## 22                    37          Full
## 23                    36          Full
## 24                    37      Honorary
## 25                    37      Honorary
## 26                    37      Honorary
## 27                    37      Honorary
## 28                    37      Honorary
## 29                    37      Honorary
## 30                    37          Full
## 31                    36          Full
## 32                    36          Full
## 33                    27          Full
## 34                    34          Full
## 35                    33          Full
## 36                    32          Full
## 37                    31          Full
## 38                    31          Full
## 39                    31          Full
## 40                    22      Honorary
## 41                    29          Full
## 42                    28          Full
## 43                    27          Full
## 44                    26          Full
## 45                    26          Full
## 46                    24          Full
## 47                    23          Full
## 48                    23          Full
## 49                    22          Full
## 50                    30          Full
## 51                    12          Full
## 52                    28      Honorary
## 53                    28          Full
## 54                    27          Full
## 55                    27      Honorary
## 56                    27          Full
## 57                    26          Full
## 58                    26          Full
## 59                    26          Full
## 60                    26          Full
## 61                    26          Full
```

```
## 62                26         Full
## 63                26         Full
## 64                26         Full
## 65                26         Full
## 66                10         Full
## 67                10         Full
## 68                10         Full
## 69                10         Full
## 70                10         Full
## 71                 8         Full
## 72                 6         Full
## 73                25         Full
## 74                25         Full
## 75                25         Full
## 76               115 Probationary
## 77               115 Probationary
## 78                23         Full
## 79                23         Full
## 80                23     Honorary
## 81                22     Honorary
## 82                22     Honorary
## 83                19         Full
## 84                19     Honorary
## 85                17         Full
## 86                17         Full
## 87                15         Full
## 88                15         Full
## 89                14         Full
## 90                11         Full
## 91                10         Full
## 92                10         Full
## 93                10         Full
## 94                10         Full
## 95                10         Full
## 96                10         Full
## 97                10         Full
## 98                10         Full
## 99                10         Full
## 100               10         Full
## 101               10         Full
## 102                9         Full
## 103                9         Full
## 104                8         Full
## 105                8         Full
## 106                8         Full
## 107                7         Full
## 108                7         Full
## 109                5         Full
## 110                6         Full
## 111                5         Full
## 112                5         Full
## 113                5         Full
## 114                5         Full
## 115                5         Full
```

```
## 116              5      Full
## 117              5      Full
## 118              5      Full
## 119              5      Full
## 120              4      Full
## 121              5      Full
## 122              4      Full
## 123            115   Academy
## 124            115   Academy
## 125              5   Academy
## 126            115   Academy
## 127              5   Academy
## 128            115   Academy
## 129            115   Academy
## 130            115   Academy
## 131              5   Academy
## 132              5   Academy
## 133            115   Academy
## 134            115   Academy
## 135            115   Academy
## 136              5   Academy
## 137            115   Academy
## 138            115   Academy
## 139            115   Academy
## 140              3      Full
## 141              3      Full
## 142              4      Full
## 143              3  Honorary
## 144              2      Full
## 145              3      Full
## 146              2      Full
## 147              2      Full
## 148              2      Full
## 149              2      Full
## 150              2      Full
## 151              2      Full
## 152              2      Full
## 153              2      Full
## 154              2      Full
## 155              2      Full
## 156              2      Full
## 157              2      Full
## 158              0  Honorary
## 159              2      Full
## 160              2      Full
## 161              2      Full
## 162              2      Full
## 163              2      Full
## 164              2      Full
## 165              2      Full
## 166              2      Full
## 167              2      Full
## 168              2      Full
## 169              2      Full
```

```
## 170                    1        Full
## 171                    1        Full
## 172                    1        Full
## 173                    0        Full
##
## 1
## 2
## 3                                                                                 Death: "Later wh
## 4
## 5
## 6
## 7
## 8
## 9
## 10
## 11
## 12
## 13
## 14
## 15
## 16
## 17
## 18
## 19                                                                                 Dies in Defe
## 20
## 21
## 22
## 23
## 24
## 25
## 26
## 27
## 28
## 29
## 30  The bad penny of the Marvel universe. First killed in Secret invasion. Revived during the Chaos
## 31
## 32
## 33    From her article: Death1: "Defeated Ultron and reversed the process leaving Jocasta a mindless
## 34
## 35
## 36
## 37
## 38
## 39
## 40
## 41
## 42
## 43
## 44
## 45
## 46
## 47
## 48
## 49
```

```
## 50
## 51                                                               Died in Aveng
## 52                          Shot with a Breathing gun and corps
## 53                                      Killed by Namor wit
## 54
## 55
## 56
## 57
## 58
## 59
## 60
## 61
## 62
## 63
## 64
## 65                                           Christ; where t
## 66
## 67
## 68
## 69
## 70
## 71
## 72
## 73
## 74           Since joining the New Avengers: First death Kill
## 75
## 76
## 77
## 78
## 79                                          Became posessed
## 80
## 81
## 82
## 83
## 84
## 85
## 86
## 87
## 88
## 89                               First died in a zero energy expl
## 90
## 91
## 92
## 93
## 94
## 95                                          First death 'F
## 96
## 97
## 98
## 99
## 100
## 101
## 102
## 103
```

```
## 104
## 105
## 106
## 107
## 108
## 109
## 110
## 111
## 112
## 113
## 114
## 115
## 116
## 117
## 118
## 119
## 120
## 121
## 122
## 123
## 124
## 125
## 126
## 127
## 128
## 129
## 130
## 131
## 132
## 133
## 134
## 135
## 136
## 137
## 138
## 139
## 140
## 141
## 142
## 143
## 144
## 145
## 146
## 147
## 148
## 149
## 150
## 151
## 152
## 153
## 154
## 155
## 156
## 157
```

```
## 158
## 159
## 160
## 161
## 162
## 163
## 164
## 165
## 166
## 167
## 168
## 169
## 170
## 171
## 172
## 173
##     Total.Deaths Total.Return
## 1             1            0
## 2             1            1
## 3             1            1
## 4             1            1
## 5             2            1
## 6             0            0
## 7             1            1
## 8             2            2
## 9             1            1
## 10            1            1
## 11            1            1
## 12            0            0
## 13            0            0
## 14            1            1
## 15            0            0
## 16            1            1
## 17            1            1
## 18            0            0
## 19            2            2
## 20            1            1
## 21            2            1
## 22            1            0
## 23            1            1
## 24            0            0
## 25            0            0
## 26            0            0
## 27            0            0
## 28            0            0
## 29            0            0
## 30            3            2
## 31            0            0
## 32            0            0
## 33            5            5
## 34            0            0
## 35            1            1
## 36            0            0
## 37            0            0
```

```
## 38          0          0
## 39          1          1
## 40          1          0
## 41          1          1
## 42          0          0
## 43          0          0
## 44          0          0
## 45          1          1
## 46          0          0
## 47          0          0
## 48          1          1
## 49          0          0
## 50          1          1
## 51          1          1
## 52          2          2
## 53          2          2
## 54          2          1
## 55          1          1
## 56          2          1
## 57          1          1
## 58          0          0
## 59          0          0
## 60          1          1
## 61          0          0
## 62          1          0
## 63          1          1
## 64          0          0
## 65          0          0
## 66          0          0
## 67          0          0
## 68          1          0
## 69          1          0
## 70          0          0
## 71          1          0
## 72          0          0
## 73          0          0
## 74          2          2
## 75          0          0
## 76          0          0
## 77          1          1
## 78          0          0
## 79          2          1
## 80          0          0
## 81          0          0
## 82          2          1
## 83          1          0
## 84          1          0
## 85          0          0
## 86          0          0
## 87          0          0
## 88          0          0
## 89          2          2
## 90          0          0
## 91          0          0
```

```
## 92                   1                   0
## 93                   1                   0
## 94                   1                   1
## 95                   2                   1
## 96                   0                   0
## 97                   0                   0
## 98                   0                   0
## 99                   0                   0
## 100                  1                   1
## 101                  0                   0
## 102                  1                   0
## 103                  0                   0
## 104                  0                   0
## 105                  0                   0
## 106                  2                   1
## 107                  0                   0
## 108                  0                   0
## 109                  0                   0
## 110                  0                   0
## 111                  0                   0
## 112                  0                   0
## 113                  1                   1
## 114                  1                   0
## 115                  0                   0
## 116                  1                   0
## 117                  0                   0
## 118                  1                   0
## 119                  0                   0
## 120                  1                   1
## 121                  0                   0
## 122                  0                   0
## 123                  0                   0
## 124                  0                   0
## 125                  0                   0
## 126                  0                   0
## 127                  0                   0
## 128                  0                   0
## 129                  0                   0
## 130                  0                   0
## 131                  1                   0
## 132                  1                   0
## 133                  0                   0
## 134                  0                   0
## 135                  0                   0
## 136                  0                   0
## 137                  0                   0
## 138                  0                   0
## 139                  0                   0
## 140                  0                   0
## 141                  0                   0
## 142                  0                   0
## 143                  0                   0
## 144                  1                   0
## 145                  0                   0
```

```
## 146          0          0
## 147          0          0
## 148          0          0
## 149          0          0
## 150          0          0
## 151          1          0
## 152          0          0
## 153          1          1
## 154          1          0
## 155          1          0
## 156          1          0
## 157          1          0
## 158          0          0
## 159          0          0
## 160          0          0
## 161          0          0
## 162          0          0
## 163          0          0
## 164          0          0
## 165          1          1
## 166          0          0
## 167          0          0
## 168          0          0
## 169          0          0
## 170          0          0
## 171          0          0
## 172          0          0
## 173          0          0
```

#Question 1: Is there some characteristic that makes an Avenger more likely to have died?

##Gender

Let's start with Gender:

```r
avengers_tidydf %>%
select(Gender,Total.Deaths) %>%
group_by(Gender,Total.Deaths) %>%
summarize(NumberOfAvengers = n()) %>%
ggplot(aes(x=Total.Deaths, y = NumberOfAvengers, fill = Gender)) +
geom_col(position = "dodge") +
geom_text(aes(label= NumberOfAvengers), position = position_dodge(width = 0.9)) +
scale_x_continuous("Number of Deaths", breaks = c(0,1,2,3,4,5)) +
ylab("Number of Avengers")
```
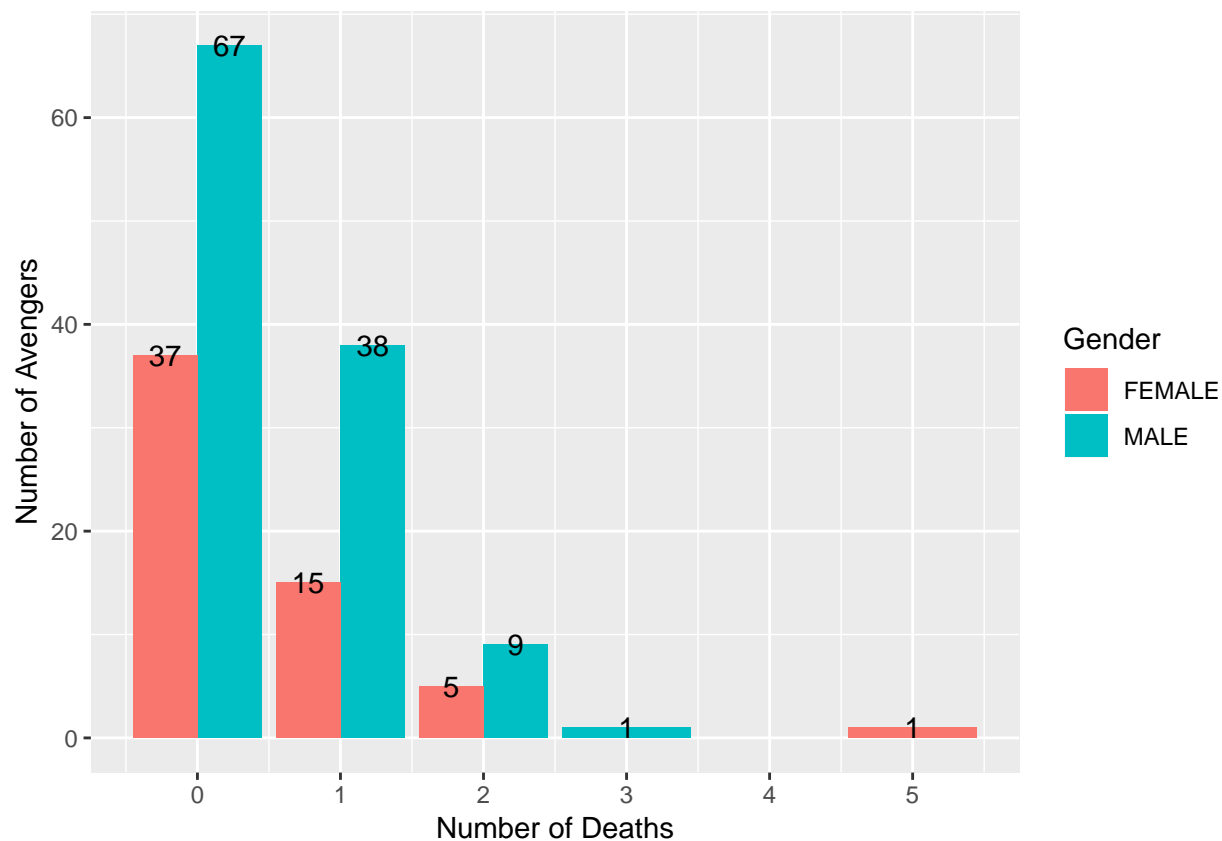
From the graph, we can see that, while there are more male Avengers in general, women are more likely to not die than men (column 0) compared to dying exactly one time (column 1). This may be more clearly seen in the next plot:

```
avengers_tidydf %>%
select(Gender,Total.Deaths) %>%
group_by(Gender,Total.Deaths) %>%
summarize(NumberOfAvengers = n()) %>%
ggplot(aes(x= Gender, y = NumberOfAvengers, fill = as.factor(Total.Deaths))) +
geom_col(position = "fill", width = .5) +
scale_fill_brewer(name ="Total Number of Deaths", palette = "Dark2") +
geom_text(aes(label= NumberOfAvengers), position = position_fill(vjust=.5)) +
xlab("Gender") +
scale_y_continuous(name = "Number of Avengers", labels = scales::percent)#+
```
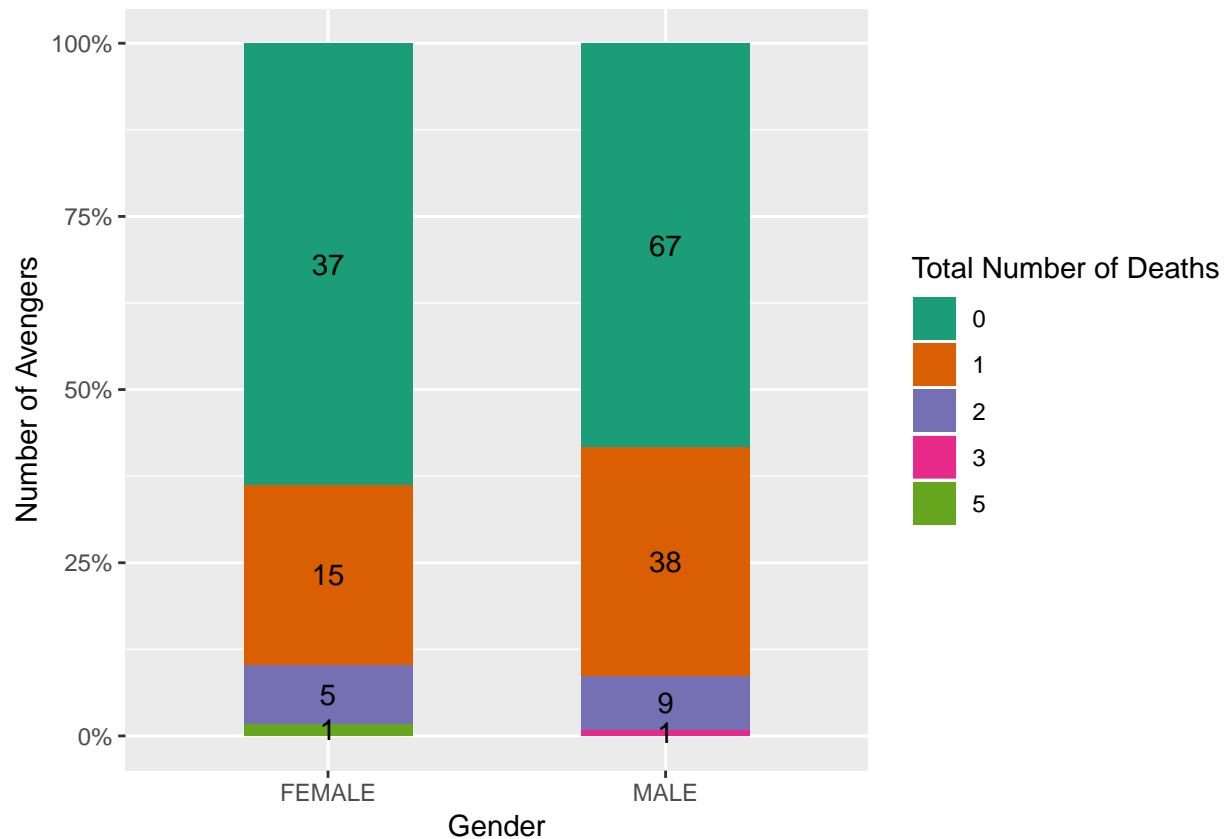
Honorary Status

Let's try honorary status. As seen in the graph, Academic and Honorary Avengers are more likely to not have died compared to Full-time Avengers.

```
avengers_tidydf %>%
select(Honorary,Total.Deaths) %>%
group_by(Honorary,Total.Deaths) %>%
summarize(NumberOfAvengers = n()) %>%
ggplot(aes(x= Honorary, y = NumberOfAvengers, fill = as.factor(Total.Deaths))) +
geom_col(position = "fill", width = .5) +
scale_fill_brewer(name ="Total Number of Deaths", palette = "Dark2") +
geom_text(aes(label= NumberOfAvengers), position = position_fill(vjust=.5)) +
xlab("Honorary Status") +
scale_y_continuous(name = "Number of Avengers", labels = scales::percent)#+
```
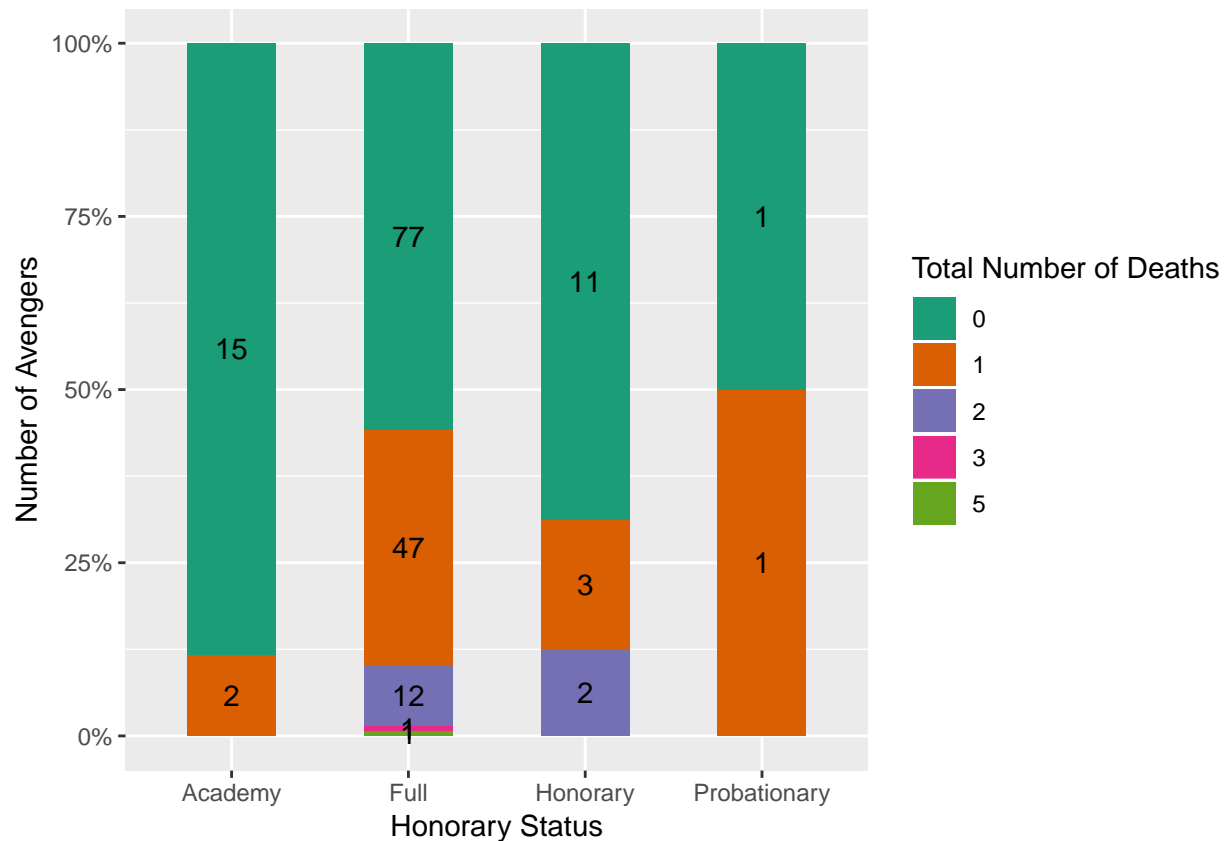
Number of Years since joining the Avengers

Let's analyze Years.since.joining. Since Years.since.joining is an integer variable, I grouped the rows by its 10 quantiles. Its subtle, but the longer an Avenger has been part of the team, the more likely it is for him to have died. Curiously, though, once you've been an Avenger for long enough, your likelyhood of not dying increases.

```
avengers_tidydf %>%
select(Years.since.joining,Total.Deaths) %>%
arrange(Years.since.joining) %>%
mutate(quartile = as.factor(ntile(Years.since.joining, 10))) %>%
group_by(quartile,Total.Deaths) %>%
summarize(NumberOfAvengers = n()) %>%
ggplot(aes(x= quartile, y = NumberOfAvengers, fill = as.factor(Total.Deaths))) +
geom_col(position = "fill", width = .5) +
scale_fill_brewer(name ="Total Number of Deaths", palette = "Dark2") +
geom_text(aes(label= NumberOfAvengers), position = position_fill(vjust=.5)) +
scale_x_discrete(name= "Quantile" ,labels = c("First", "Second", "Third", "Fourth", "Fifth", "Sixth",
scale_y_continuous(name = "Number of Avengers", labels = scales::percent)#+
```
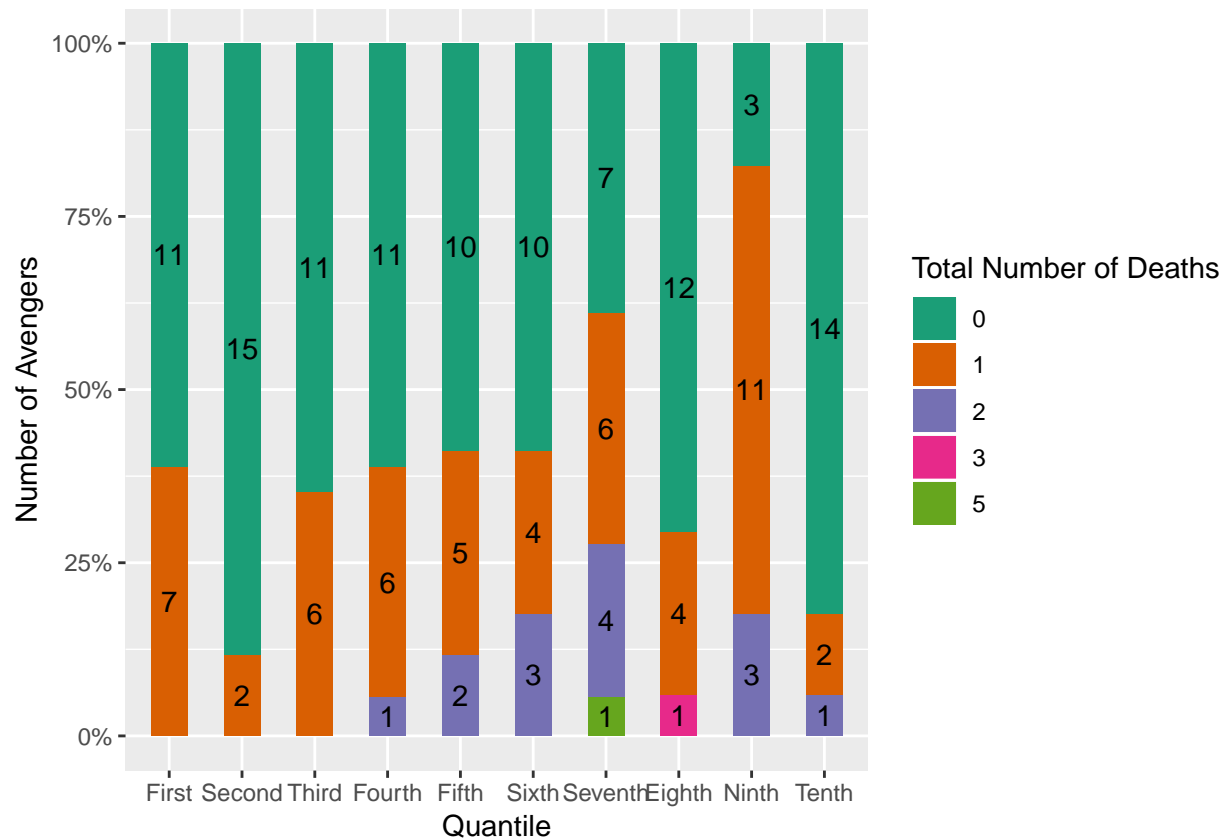
Number of Appereances in comic books

We will repeat the previous process for the number of appereances.

```
avengers_tidydf %>%
select(Appearances,Total.Deaths) %>%
arrange(Appearances) %>%
mutate(quartile = as.factor(ntile(Appearances, 10))) %>%
group_by(quartile,Total.Deaths) %>%
summarize(NumberOfAvengers = n()) %>%
ggplot(aes(x= quartile, y = NumberOfAvengers, fill = as.factor(Total.Deaths))) +
geom_col(position = "fill", width = .5) +
scale_fill_brewer(name ="Total Number of Deaths", palette = "Dark2") +
geom_text(aes(label= NumberOfAvengers), position = position_fill(vjust=.5)) +
scale_x_discrete(name= "Quantile" ,labels = c("First", "Second", "Third", "Fourth", "Fifth", "Sixth",
scale_y_continuous(name = "Number of Avengers", labels = scales::percent)#+
```
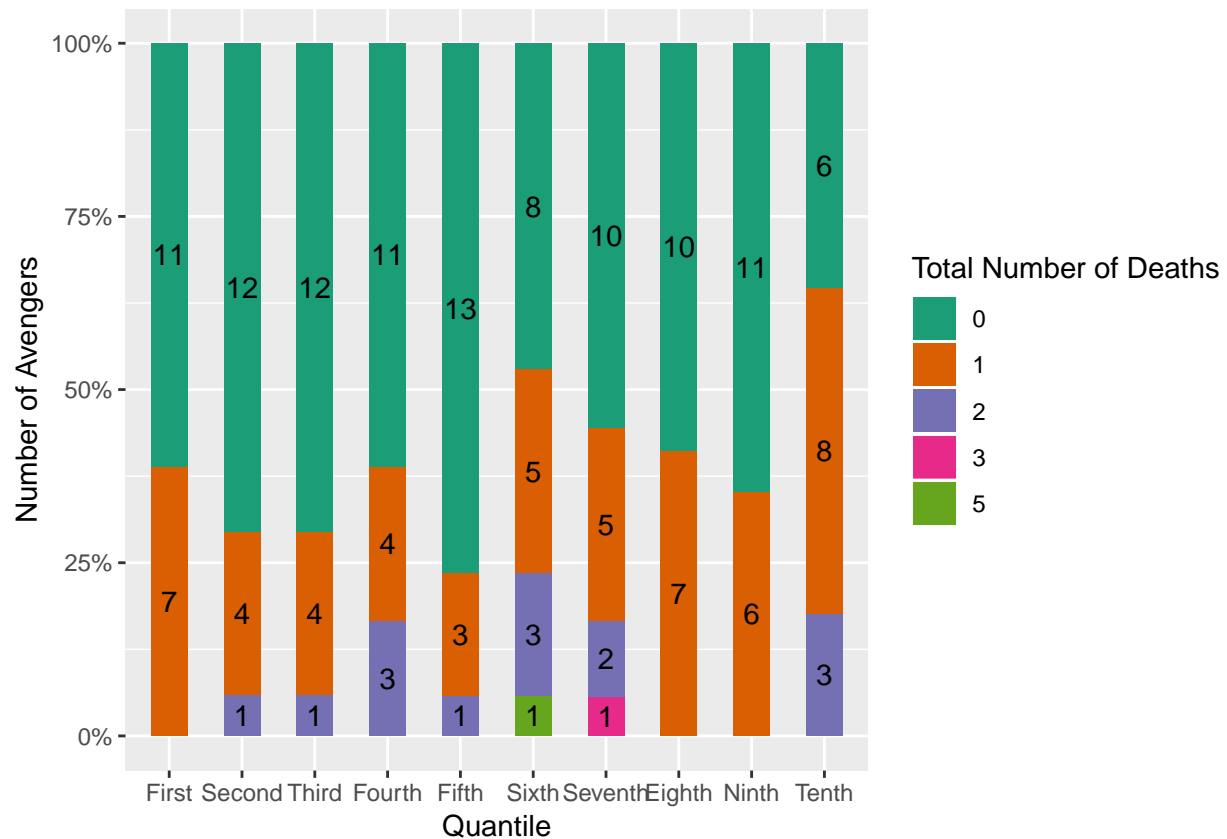
#Question 2: Is there some characteristic that makes an Avenger more likely to have revived?

##Filtering all Avengers that have not died We can repeat the plots from question 1 here, with one alteration. We need to filter all avengers that have not died from the dataframe. So:

```
avengersThatDied_tidydf <- avengers_tidydf %>%
                          filter(Total.Deaths!=0)
avengersThatDied_tidydf
```

```
##                                                              URL
## 1                  http://marvel.wikia.com/Henry_Pym_(Earth-616)
## 2              http://marvel.wikia.com/Janet_van_Dyne_(Earth-616)
## 3               http://marvel.wikia.com/Anthony_Stark_(Earth-616)
## 4         http://marvel.wikia.com/Robert_Bruce_Banner_(Earth-616)
## 5                http://marvel.wikia.com/Thor_Odinson_(Earth-616)
## 6               http://marvel.wikia.com/Steven_Rogers_(Earth-616)
## 7                http://marvel.wikia.com/Clint_Barton_(Earth-616)
## 8             http://marvel.wikia.com/Pietro_Maximoff_(Earth-616)
## 9              http://marvel.wikia.com/Wanda_Maximoff_(Earth-616)
## 10           http://marvel.wikia.com/Jacques_Duquesne_(Earth-616)
## 11                    http://marvel.wikia.com/Vision_(Earth-616)
## 12         http://marvel.wikia.com/Natalia_Romanova_(Earth-616)#
## 13                   http://marvel.wikia.com/Mantis_(Earth-616)#
## 14          http://marvel.wikia.com/Heather_Douglas_(Earth-616)#
## 15          http://marvel.wikia.com/Patricia_Walker_(Earth-616)#
## 16             http://marvel.wikia.com/Matthew_Hawk_(Earth-616)#
## 17             http://marvel.wikia.com/Robert_Frank_(Earth-616)#
```

```
## 18                    http://marvel.wikia.com/Simon_Williams_(Earth-616)#
## 19                        http://marvel.wikia.com/Mar-Vell_(Earth-616)#
## 20                        http://marvel.wikia.com/Jocasta_(Earth-616)#
## 21            http://marvel.wikia.com/Jennifer_Walters_(Earth-616)#
## 22              http://marvel.wikia.com/Barbara_Morse_(Earth-616)#
## 23              http://marvel.wikia.com/Moira_Brandon_(Earth-616)#
## 24            http://marvel.wikia.com/Benjamin_Grimm_(Earth-616)#
## 25      http://marvel.wikia.com/Human_Torch_(Android)_(Earth-616)#
## 26             http://marvel.wikia.com/2ZP45-9-X-51_(Earth-616)#
## 27            http://marvel.wikia.com/Namor_McKenzie_(Earth-616)#
## 28                http://marvel.wikia.com/Scott_Lang_(Earth-616)#
## 29            http://marvel.wikia.com/Anthony_Druid_(Earth-616)#
## 30        http://marvel.wikia.com/Marrina_Smallwood_(Earth-616)#
## 31       http://marvel.wikia.com/Ravonna_Renslayer_(Earth-6311)#
## 32               http://marvel.wikia.com/Rita_DeMara_(Earth-616)#
## 33            http://marvel.wikia.com/Dennis_Dunphy_(Earth-616)#
## 34                http://marvel.wikia.com/Gilgamesh_(Earth-616)#
## 35           http://marvel.wikia.com/Wendell_Vaughn_(Earth-616)#
## 36               http://marvel.wikia.com/Dinah_Soar_(Earth-616)#
## 37              http://marvel.wikia.com/DeMarr_Davis_(Earth-616)#
## 38               http://marvel.wikia.com/Monkey_Joe_(Earth-616)#
## 39             http://marvel.wikia.com/Doug_Taggert_(Earth-616)#
## 40               http://marvel.wikia.com/Wade_Wilson_(Earth-616)#
## 41              http://marvel.wikia.com/Peter_Parker_(Earth-616)#
## 42             http://marvel.wikia.com/William_Baker_(Earth-616)#
## 43            http://marvel.wikia.com/Eric_Masterson_(Earth-616)#
## 44                http://marvel.wikia.com/Deathcry_(Earth-616)#
## 45          http://marvel.wikia.com/Anthony_Stark_(Earth-96020)#
## 46 http://marvel.wikia.com/Giuletta_Nefaria_(Masque)_(Earth-616)#
## 47             http://marvel.wikia.com/Jonathan_Hart_(Earth-616)#
## 48                  http://marvel.wikia.com/Veranke_(Earth-616)#
## 49             http://marvel.wikia.com/James_Howlett_(Earth-616)#
## 50           http://marvel.wikia.com/Robert_Reynolds_(Earth-616)#
## 51              http://marvel.wikia.com/Maya_Lopez_(Earth-616)#
## 52            http://marvel.wikia.com/Cassandra_Lang_(Earth-616)#
## 53            http://marvel.wikia.com/Vision_(Jonas)_(Earth-616)#
## 54                      http://marvel.wikia.com/Ares_(Earth-616)#
## 55            http://marvel.wikia.com/Sharon_Carter_(Earth-616)#
## 56            http://marvel.wikia.com/Eric_O%27Grady_(Earth-616)#
## 57            http://marvel.wikia.com/Richard_Rider_(Earth-616)#
## 58             http://marvel.wikia.com/Dennis_Sykes_(Earth-616)#
## 59            http://marvel.wikia.com/Thaddeus_Ross_(Earth-616)#
## 60               http://marvel.wikia.com/Ken_Mack_(Earth-616)#
## 61            http://marvel.wikia.com/Humberto_Lopez_(Earth-616)#
## 62            http://marvel.wikia.com/Otto_Octavius_(Earth-616)#
## 63            http://marvel.wikia.com/Marcus_Milton_(Earth-13034)#
## 64            http://marvel.wikia.com/Shiro_Yoshida_(Earth-616)#
## 65                http://marvel.wikia.com/Ex_Nihilo_(Earth-616)#
## 66      http://marvel.wikia.com/Abyss_(Ex_Nihilo%27s)_(Earth-616)#
## 67               http://marvel.wikia.com/Nightmask_(Earth-616)#
## 68             http://marvel.wikia.com/Kevin_Connor_(Earth-616)#
## 69             http://marvel.wikia.com/Victor_Mancha_(Earth-616)#
##                         Name.Alias Appearances Current. Gender
## 1      Henry Jonathan "Hank" Pym        1269      YES    MALE
```

```
## 2                 Janet van Dyne  1165  YES FEMALE
## 3    Anthony Edward "Tony" Stark  3068  YES   MALE
## 4            Robert Bruce Banner  2089  YES   MALE
## 5                   Thor Odinson  2402  YES   MALE
## 6                  Steven Rogers  3458  YES   MALE
## 7         Clinton Francis Barton  1456  YES   MALE
## 8               Pietro Maximoff   769  YES   MALE
## 9                 Wanda Maximoff  1214  YES FEMALE
## 10              Jacques Duquesne   115   NO   MALE
## 11            Victor Shade (alias) 1036 YES   MALE
## 12    Natalia Alianovna Romanova  1112  YES FEMALE
## 13                        Brandt   160   NO FEMALE
## 14                Heather Douglas   332   NO FEMALE
## 15                  Patsy Walker   557   NO FEMALE
## 16 Matthew Liebowitz (birth name)  197   NO   MALE
## 17           Robert L. Frank Sr.   106   NO   MALE
## 18                Simon Williams   692  YES   MALE
## 19                      Mar-Vell   254   NO   MALE
## 20                       Jocasta   141  YES FEMALE
## 21              Jennifer Walters   933  YES FEMALE
## 22      Barbara Barton (nee Morse)  374  NO FEMALE
## 23                 Moira Brandon     2   NO FEMALE
## 24           Benjamin Jacob Grimm  2305  NO   MALE
## 25            Jim Hammond (alias)   565   NO   MALE
## 26                          X-51   149   NO   MALE
## 27                Namor McKenzie  1561   NO   MALE
## 28       Scott Edward Harris Lang   217   NO   MALE
## 29          Anthony Ludgate Druid   158   NO   MALE
## 30             Marrina Smallwood    86   NO FEMALE
## 31        Ravonna Lexus Renslayer    41   NO FEMALE
## 32                   Rita DeMara    68   NO FEMALE
## 33                 Dennis Dunphy    70   NO   MALE
## 34                                  61   NO   MALE
## 35          Wendell Elvis Vaughn   293   NO   MALE
## 36                                  22   NO FEMALE
## 37                   DeMarr Davis    31  YES   MALE
## 38                                   7   NO   MALE
## 39                  Doug Taggert     3   NO   MALE
## 40                   Wade Wilson   575   NO   MALE
## 41         Peter Benjamin Parker  4333  YES   MALE
## 42                 William Baker   355   NO   MALE
## 43          Eric Kevin Masterson   202   NO   MALE
## 44                                  50   NO FEMALE
## 45          Anthony Edward Stark    27   NO   MALE
## 46            "Giulietta Nefaria"    18   NO FEMALE
## 47                  Jonathan Hart   126   NO   MALE
## 48                       Veranke   159   NO FEMALE
## 49         James "Logan" Howlett  3130  YES   MALE
## 50               Robert Reynolds   241   NO   MALE
## 51                    Maya Lopez    67   NO FEMALE
## 52                   Cassie Lang   160   NO FEMALE
## 53                 Alias: Jonas   121   NO   MALE
## 54                          Ares   236   NO   MALE
## 55                 Sharon Carter   333   NO FEMALE
```

```
## 56            Eric O'Grady    88      NO    MALE
## 57           Richard Rider   380      NO    MALE
## 58            Dennis Sykes     6      NO    MALE
## 59           Thaddeus Ross   417      NO    MALE
## 60               Ken Mack    59      NO    MALE
## 61          Humberto Lopez    66     YES    MALE
## 62           Otto Octavius   561      NO    MALE
## 63           Marcus Milton    65     YES    MALE
## 64           Shiro Yoshida   176     YES    MALE
## 65                            24     YES    MALE
## 66                            25     YES  FEMALE
## 67                    Adam    35     YES    MALE
## 68      Kevin Kale Connor    44     YES    MALE
## 69          Victor Mancha    75     YES    MALE
##     Probationary.Introl Full.Reserve.Avengers.Intro Year
## 1                                             Sep-63 1963
## 2                                             Sep-63 1963
## 3                                             Sep-63 1963
## 4                                             Sep-63 1963
## 5                                             Sep-63 1963
## 6                                             Mar-64 1964
## 7                                             May-65 1965
## 8                                             May-65 1965
## 9                                             May-65 1965
## 10                                            Sep-65 1965
## 11                                            Nov-68 1968
## 12                                            May-73 1973
## 13                                            Aug-73 1973
## 14             Jul-75                         Sep-76 1976
## 15             Nov-75                         Sep-76 1976
## 16                                            Aug-75 1975
## 17             Apr-77                         Jul-78 1978
## 18             Apr-77                         Mar-79 1979
## 19                                            Jul-78 1978
## 20             Jul-80                         Nov-88 1988
## 21                                            Jul-82 1982
## 22             Jun-84                         Sep-84 1984
## 23                                            Nov-93 1993
## 24                                            Jun-86 1986
## 25                                            Nov-89 1989
## 26                                            Jun-92 1992
## 27                                            Dec-85 1985
## 28             Jan-87                          3-Feb 2003
## 29                                            Apr-87 1987
## 30                                            Dec-87 1987
## 31                                            May-88 1988
## 32                                            Nov-88 1988
## 33                                            Jan-88 1988
## 34                                            Feb-89 1989
## 35                                            Oct-89 1989
## 36                                            Jul-89 1989
## 37                                            Jul-89 1989
## 38                                             5-May 2005
## 39                                             5-May 2005
```

```
## 40                                                  7-Sep 2007
## 41                                                 Apr-90 1990
## 42                          Feb-91                         1900
## 43                                                 Jan-92 1992
## 44                                                 Jul-93 1993
## 45                                                 Feb-96 1996
## 46                                                 Apr-96 1996
## 47                                                  1-Aug 2001
## 48                                                  5-Mar 2005
## 49                                                  5-Jun 2005
## 50                                                  5-Oct 2005
## 51                                                  5-Nov 2005
## 52                                                  5-Jun 2005
## 53                                                  6-Feb 2006
## 54                                                  7-Mar 2007
## 55                                                 10-May 2010
## 56                                                 10-May 2010
## 57                                                 10-May 2010
## 58                                                 10-Sep 2010
## 59                                                 11-Jun 2011
## 60                                                 10-Aug 2010
## 61                                                 10-Aug 2010
## 62                                                 13-Jan 2013
## 63                                                 13-Feb 2013
## 64                                                 13-May 2013
## 65                                                 13-Oct 2013
## 66                                                 13-Oct 2013
## 67                                                 13-Oct 2013
## 68                                                 13-Oct 2013
## 69                                                 13-Sep 2013
##    Years.since.joining   Honorary
## 1                    52       Full
## 2                    52       Full
## 3                    52       Full
## 4                    52       Full
## 5                    52       Full
## 6                    51       Full
## 7                    50       Full
## 8                    50       Full
## 9                    50       Full
## 10                   50       Full
## 11                   47       Full
## 12                   42       Full
## 13                   42       Full
## 14                   39       Full
## 15                   39       Full
## 16                   40       Full
## 17                   37       Full
## 18                   36       Full
## 19                   37       Full
## 20                   27       Full
## 21                   33       Full
## 22                   31       Full
## 23                   22   Honorary
```

```
## 24              29         Full
## 25              26         Full
## 26              23         Full
## 27              30         Full
## 28              12         Full
## 29              28     Honorary
## 30              28         Full
## 31              27         Full
## 32              27     Honorary
## 33              27         Full
## 34              26         Full
## 35              26         Full
## 36              26         Full
## 37              26         Full
## 38              10         Full
## 39              10         Full
## 40               8         Full
## 41              25         Full
## 42             115 Probationary
## 43              23         Full
## 44              22     Honorary
## 45              19         Full
## 46              19     Honorary
## 47              14         Full
## 48              10         Full
## 49              10         Full
## 50              10         Full
## 51              10         Full
## 52              10         Full
## 53               9         Full
## 54               8         Full
## 55               5         Full
## 56               5         Full
## 57               5         Full
## 58               5         Full
## 59               4         Full
## 60               5      Academy
## 61               5      Academy
## 62               2         Full
## 63               2         Full
## 64               2         Full
## 65               2         Full
## 66               2         Full
## 67               2         Full
## 68               2         Full
## 69               2         Full
##
## 1
## 2
## 3                                                                    Death: "Later wh
## 4
## 5
## 6
## 7
```

```
## 8
## 9
## 10
## 11
## 12
## 13
## 14                                                                              Dies in Defer
## 15
## 16
## 17
## 18
## 19 The bad penny of the Marvel universe. First killed in Secret invasion. Revived during the Chaos wa
## 20    From her article: Death1: "Defeated Ultron and reversed the process leaving Jocasta a mindless
## 21
## 22
## 23
## 24
## 25                                                                                              
## 26
## 27
## 28                                                                          Died in Avenge
## 29                                                  Shot with a Breathing gun and corpse
## 30                                                          Killed by Namor with
## 31
## 32
## 33
## 34
## 35
## 36
## 37
## 38
## 39
## 40
## 41                                      Since joining the New Avengers: First death Kille
## 42
## 43                                                          Became posessed d
## 44
## 45
## 46
## 47                                              First died in a zero energy expl
## 48
## 49
## 50
## 51                                                          First death 'ha
## 52
## 53
## 54
## 55
## 56
## 57
## 58
## 59
## 60
## 61
```

53

```
## 62
## 63
## 64
## 65
## 66
## 67
## 68
## 69
##    Total.Deaths Total.Return
## 1             1            0
## 2             1            1
## 3             1            1
## 4             1            1
## 5             2            1
## 6             1            1
## 7             2            2
## 8             1            1
## 9             1            1
## 10            1            1
## 11            1            1
## 12            1            1
## 13            1            1
## 14            2            2
## 15            1            1
## 16            2            1
## 17            1            0
## 18            1            1
## 19            3            2
## 20            5            5
## 21            1            1
## 22            1            1
## 23            1            0
## 24            1            1
## 25            1            1
## 26            1            1
## 27            1            1
## 28            1            1
## 29            2            2
## 30            2            2
## 31            2            1
## 32            1            1
## 33            2            1
## 34            1            1
## 35            1            1
## 36            1            0
## 37            1            1
## 38            1            0
## 39            1            0
## 40            1            0
## 41            2            2
## 42            1            1
## 43            2            1
## 44            2            1
## 45            1            0
```

```
## 46              1              0
## 47              2              2
## 48              1              0
## 49              1              0
## 50              1              1
## 51              2              1
## 52              1              1
## 53              1              0
## 54              2              1
## 55              1              1
## 56              1              0
## 57              1              0
## 58              1              0
## 59              1              1
## 60              1              0
## 61              1              0
## 62              1              0
## 63              1              0
## 64              1              1
## 65              1              0
## 66              1              0
## 67              1              0
## 68              1              0
## 69              1              1
```

Gender

Let's start with Gender:

```r
avengersThatDied_tidydf %>%
select(Gender,Total.Return) %>%
group_by(Gender,Total.Return) %>%
summarize(NumberOfAvengers = n()) %>%
ggplot(aes(x= Gender, y = NumberOfAvengers, fill = as.factor(Total.Return))) +
geom_col(position = "fill", width = .5) +
scale_fill_brewer(name ="Total Number of Revivals", palette = "Dark2") +
geom_text(aes(label= NumberOfAvengers), position = position_fill(vjust=.5)) +
xlab("Gender") +
scale_y_continuous(name = "Number of Avengers", labels = scales::percent)#+
```
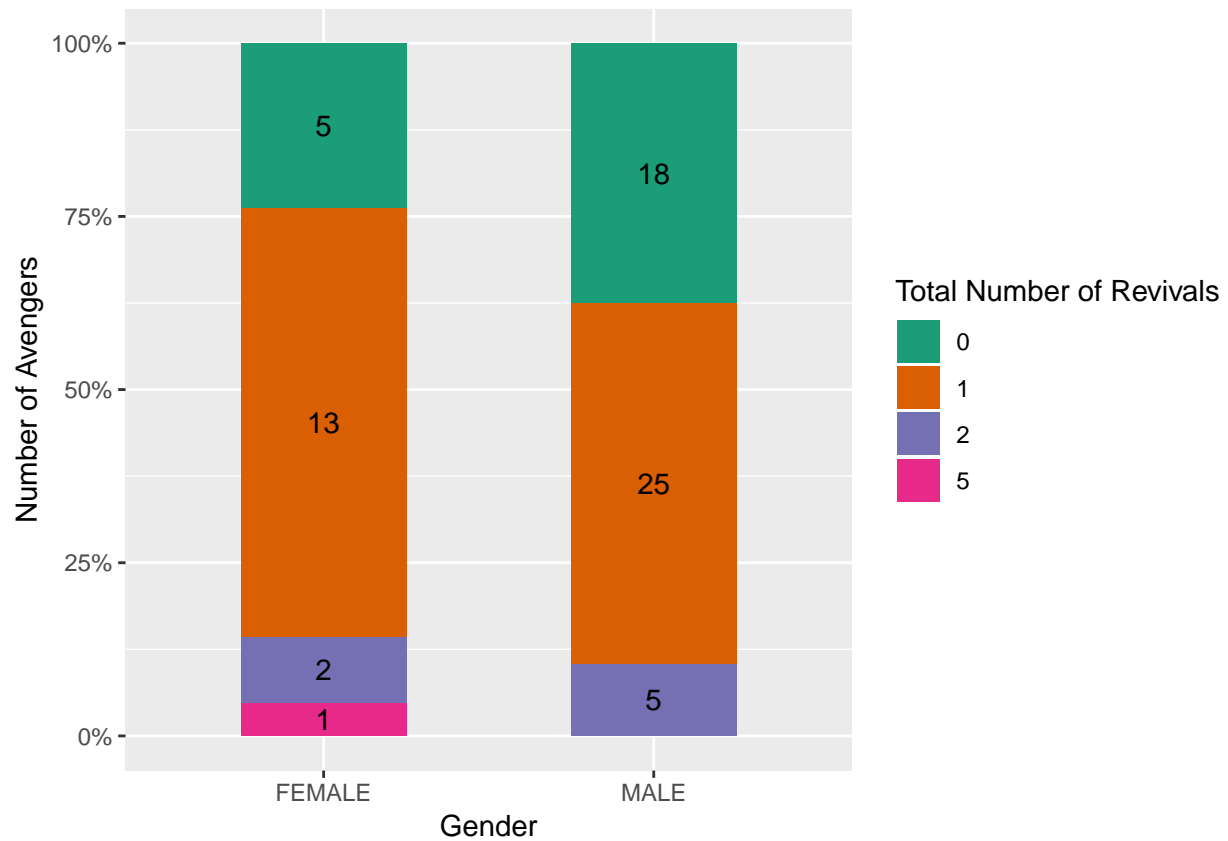
Honorary Status

```
avengersThatDied_tidydf %>%
select(Honorary,Total.Return) %>%
group_by(Honorary,Total.Return) %>%
summarize(NumberOfAvengers = n()) %>%
ggplot(aes(x= Honorary, y = NumberOfAvengers, fill = as.factor(Total.Return))) +
geom_col(position = "fill", width = .5) +
scale_fill_brewer(name ="Total Number of Revivals", palette = "Dark2") +
geom_text(aes(label= NumberOfAvengers), position = position_fill(vjust=.5)) +
xlab("Honorary Status") +
scale_y_continuous(name = "Number of Avengers", labels = scales::percent)#+
```
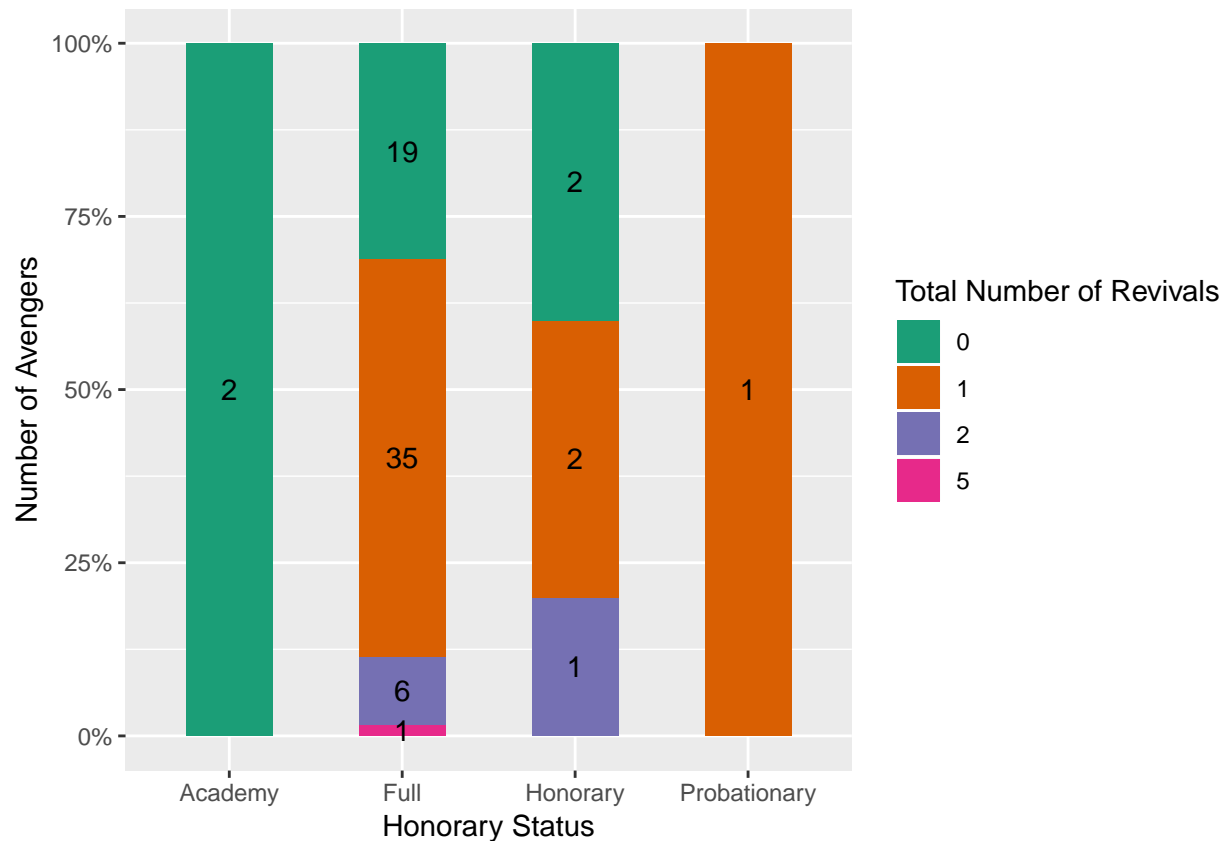
Number of Years since joining the Avengers

```
avengersThatDied_tidydf %>%
select(Years.since.joining,Total.Return) %>%
arrange(Years.since.joining) %>%
mutate(quartile = as.factor(ntile(Years.since.joining, 10))) %>%
group_by(quartile,Total.Return) %>%
summarize(NumberOfAvengers = n()) %>%
ggplot(aes(x= quartile, y = NumberOfAvengers, fill = as.factor(Total.Return))) +
geom_col(position = "fill", width = .5) +
scale_fill_brewer(name ="Total Number of Revivals", palette = "Dark2") +
geom_text(aes(label= NumberOfAvengers), position = position_fill(vjust=.5)) +
scale_x_discrete(name= "Quantile" ,labels = c("First", "Second", "Third", "Fourth", "Fifth", "Sixth",
scale_y_continuous(name = "Number of Avengers", labels = scales::percent)#+
```
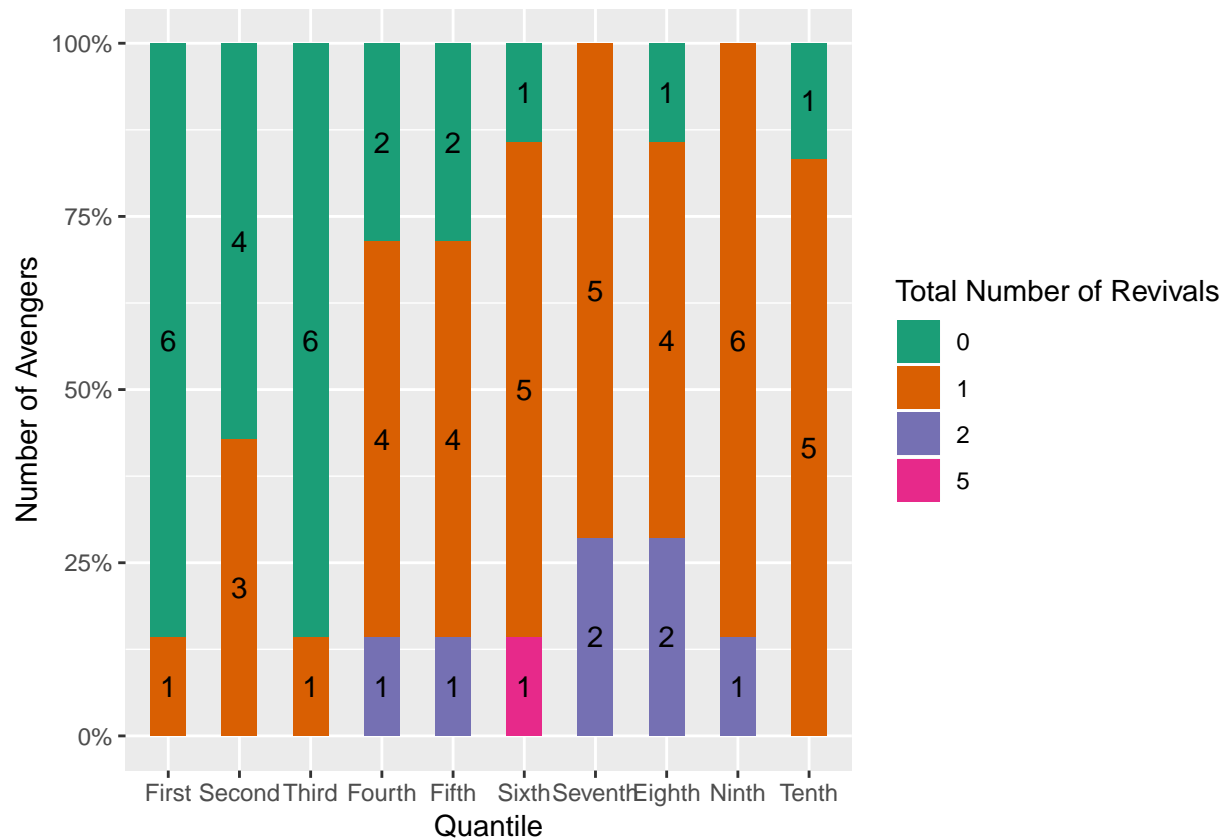
Number of Appereances in comic books

```r
avengersThatDied_tidydf %>%
select(Appearances,Total.Return) %>%
arrange(Appearances) %>%
mutate(quartile = as.factor(ntile(Appearances, 10))) %>%
group_by(quartile,Total.Return) %>%
summarize(NumberOfAvengers = n()) %>%
ggplot(aes(x= quartile, y = NumberOfAvengers, fill = as.factor(Total.Return))) +
geom_col(position = "fill", width = .5) +
scale_fill_brewer(name ="Total Number of Revivals", palette = "Dark2") +
geom_text(aes(label= NumberOfAvengers), position = position_fill(vjust=.5)) +
scale_x_discrete(name= "Quantile" ,labels = c("First", "Second", "Third", "Fourth", "Fifth", "Sixth",
scale_y_continuous(name = "Number of Avengers", labels = scales::percent)#+
```
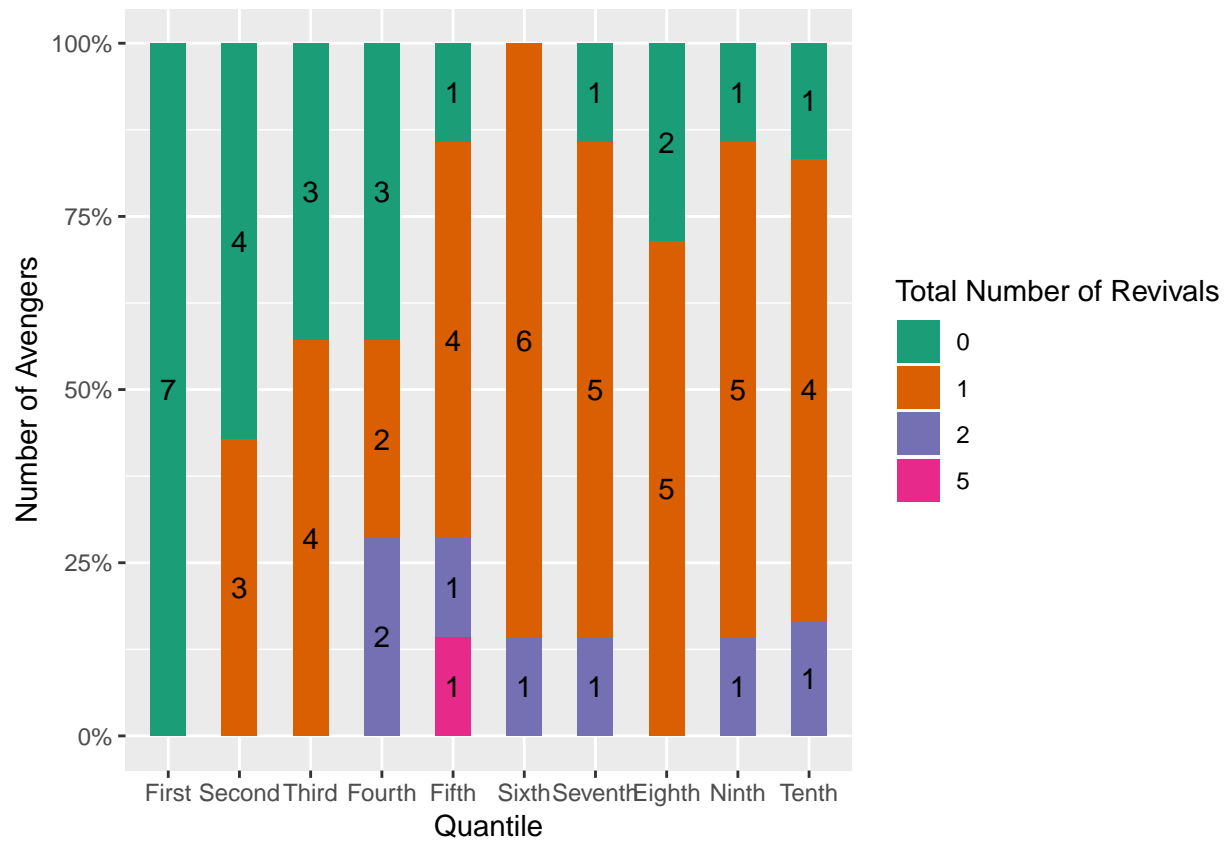
#Question 3: Is the number of comic book appearances of a superhero correlated to the number of years since he joined the team?