data-cleaning.R

destynilalla

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nri\_data <- read.csv("NRI\_Table\_Counties/NRI\_Table\_Counties\_cleaned.csv")  
head(nri\_data) # View the first few rows of the dataset

## OID\_ STATE STATEABBRV COUNTY POPULATION BUILDVALUE AGRIVALUE AREA  
## 1 1 Alabama AL Autauga 58764 9123273852 24613998 610.4705  
## 2 2 Alabama AL Baldwin 231365 45968484827 138089013 2047.7388  
## 3 3 Alabama AL Barbour 25160 4847697294 121075758 913.6465  
## 4 4 Alabama AL Bibb 22239 3146946680 4819356 632.4868  
## 5 5 Alabama AL Blount 58992 7815620481 278570859 657.1966  
## 6 6 Alabama AL Bullock 10326 1578438328 77099940 631.4545  
## RISK\_SCORE RISK\_RATNG RISK\_SPCTL EAL\_SCORE EAL\_RATNG EAL\_SPCTL  
## 1 49.22049 Relatively Low 34.32836 50.94398 Very Low 40.29851  
## 2 97.70920 Relatively High 98.50746 98.23584 Relatively High 98.50746  
## 3 56.18836 Relatively Low 41.79104 44.87775 Very Low 37.31343  
## 4 32.48489 Very Low 19.40299 30.48592 Very Low 20.89552  
## 5 65.12886 Relatively Low 55.22388 63.63355 Relatively Low 58.20896  
## 6 32.45307 Very Low 17.91045 27.11235 Very Low 19.40299  
## SOVI\_SCORE SOVI\_RATNG SOVI\_SPCTL RESL\_SCORE RESL\_RATNG  
## 1 51.30 Relatively Moderate 0.20895522 51.81 Relatively Moderate  
## 2 31.03 Relatively Low 0.02985075 86.12 Very High  
## 3 99.27 Very High 1.00000000 6.24 Very Low  
## 4 80.78 Very High 0.73134328 19.73 Very Low  
## 5 51.37 Relatively Moderate 0.22388060 22.82 Relatively Low  
## 6 83.10 Very High 0.76119403 17.98 Very Low  
## RESL\_SPCTL AVLN\_EVNTS AVLN\_RISKS AVLN\_RISKR CFLD\_EVNTS CFLD\_RISKS  
## 1 0.79104478 NA NA Not Applicable NA NA  
## 2 1.00000000 NA NA Not Applicable NA 55.93561  
## 3 0.02985075 NA NA Not Applicable NA NA  
## 4 0.31343284 NA NA Not Applicable NA NA  
## 5 0.46268657 NA NA Not Applicable NA NA  
## 6 0.25373134 NA NA Not Applicable NA NA  
## CFLD\_RISKR CWAV\_EVNTS CWAV\_RISKS CWAV\_RISKR DRGT\_EVNTS DRGT\_RISKS  
## 1 Not Applicable 0 0 No Rating 651 50.65224  
## 2 Relatively Low 0 0 No Rating 434 86.79605  
## 3 Not Applicable 0 0 No Rating 1064 80.68724  
## 4 Not Applicable 0 0 No Rating 721 32.42125  
## 5 Not Applicable 0 0 No Rating 665 52.14763  
## 6 Not Applicable 0 0 No Rating 1022 95.03659  
## DRGT\_RISKR ERQK\_EVNTS ERQK\_RISKS ERQK\_RISKR HAIL\_EVNTS  
## 1 Relatively Low NA 57.07922 Very Low 96  
## 2 Relatively Moderate NA 69.16958 Relatively Low 43  
## 3 Relatively Low NA 44.00255 Very Low 65  
## 4 Very Low NA 61.69265 Very Low 118  
## 5 Relatively Low NA 73.08304 Relatively Low 174  
## 6 Relatively Moderate NA 36.43016 Very Low 80  
## HAIL\_RISKS HAIL\_RISKR HWAV\_EVNTS HWAV\_RISKS HWAV\_RISKR  
## 1 57.11104 Relatively Low 6.00000 87.08241 Relatively Moderate  
## 2 52.94305 Relatively Low 12.42771 91.09131 Relatively Moderate  
## 3 39.99364 Very Low 6.00000 69.71047 Relatively Low  
## 4 43.68438 Very Low 6.00000 67.22876 Relatively Low  
## 5 43.71619 Very Low 6.00000 82.43716 Relatively Moderate  
## 6 24.02164 Very Low 6.00000 45.17976 Relatively Low  
## HRCN\_EVNTS HRCN\_RISKS HRCN\_RISKR ISTM\_EVNTS ISTM\_RISKS  
## 1 13 67.65366 Relatively Low 28 23.850766  
## 2 50 98.87842 Relatively High 11 32.644903  
## 3 21 77.16465 Relatively Low 27 18.887408  
## 4 11 51.09915 Very Low 28 43.637575  
## 5 6 54.01525 Very Low 35 59.926716  
## 6 20 68.19201 Relatively Low 34 9.293804  
## ISTM\_RISKR LNDS\_EVNTS LNDS\_RISKS LNDS\_RISKR LTNG\_EVNTS  
## 1 Very Low 0 41.76036 Relatively Low 1737  
## 2 Relatively Low 1 72.50241 Relatively Low 2560  
## 3 Very Low 0 70.79987 Relatively Low 1643  
## 4 Relatively Low 0 41.85673 Relatively Low 1861  
## 5 Relatively Moderate 0 46.67523 Relatively Low 1954  
## 6 Very Low 0 61.19499 Relatively Low 1586  
## LTNG\_RISKS LTNG\_RISKR RFLD\_EVNTS RFLD\_RISKS RFLD\_RISKR  
## 1 54.24710 Relatively Low 26 52.24308 Relatively Low  
## 2 99.38867 Very High 65 87.94146 Relatively Moderate  
## 3 82.30373 Relatively Moderate 6 13.96755 Very Low  
## 4 39.83269 Relatively Low 16 25.16704 Very Low  
## 5 84.07336 Relatively Moderate 28 34.26662 Very Low  
## 6 57.52896 Relatively Low 8 19.15367 Very Low  
## SWND\_EVNTS SWND\_RISKS SWND\_RISKR TRND\_EVNTS TRND\_RISKS  
## 1 45 43.97073 Relatively Low 39 73.84664  
## 2 52 53.77028 Relatively Low 68 91.37766  
## 3 50 35.50748 Relatively Low 34 73.94209  
## 4 50 23.25803 Relatively Low 27 71.96946  
## 5 146 76.10563 Relatively Moderate 50 89.72319  
## 6 52 21.44448 Very Low 21 47.62965  
## TRND\_RISKR TSUN\_EVNTS TSUN\_RISKS TSUN\_RISKR VLCN\_EVNTS  
## 1 Relatively Moderate NA NA Not Applicable NA  
## 2 Relatively Moderate NA NA Insufficient Data NA  
## 3 Relatively Moderate NA NA Not Applicable NA  
## 4 Relatively Moderate NA NA Not Applicable NA  
## 5 Relatively Moderate NA NA Not Applicable NA  
## 6 Relatively Low NA NA Not Applicable NA  
## VLCN\_RISKS VLCN\_RISKR WFIR\_EVNTS WFIR\_RISKS WFIR\_RISKR  
## 1 NA Not Applicable NA 29.621381 Very Low  
## 2 NA Not Applicable NA 92.650334 Relatively Moderate  
## 3 NA Not Applicable NA 27.266942 Very Low  
## 4 NA Not Applicable NA 15.049316 Very Low  
## 5 NA Not Applicable NA 19.630926 Very Low  
## 6 NA Not Applicable NA 9.481387 Very Low  
## WNTW\_EVNTS WNTW\_RISKS WNTW\_RISKR NRI\_VER  
## 1 7.000000 12.21763 Very Low 23-Mar  
## 2 2.417378 52.08400 Relatively Low 23-Mar  
## 3 3.000000 19.53548 Very Low 23-Mar  
## 4 12.000000 11.10404 Very Low 23-Mar  
## 5 14.000000 21.44448 Very Low 23-Mar  
## 6 4.000000 10.88132 Very Low 23-Mar

summary(nri\_data) # Generate summary statistics

## OID\_ STATE STATEABBRV COUNTY   
## Min. : 1.0 Length:3231 Length:3231 Length:3231   
## 1st Qu.: 808.5 Class :character Class :character Class :character   
## Median :1616.0 Mode :character Mode :character Mode :character   
## Mean :1616.0   
## 3rd Qu.:2423.5   
## Max. :3231.0   
##   
## POPULATION BUILDVALUE AGRIVALUE AREA   
## Min. : 64 Min. :5.072e+07 Min. :0.000e+00 Min. : 2.07   
## 1st Qu.: 10926 1st Qu.:2.487e+09 1st Qu.:2.127e+07 1st Qu.: 438.72   
## Median : 25791 Median :5.561e+09 Median :6.873e+07 Median : 646.46   
## Mean : 103597 Mean :1.931e+10 Mean :1.381e+08 Mean : 1191.32   
## 3rd Qu.: 67104 3rd Qu.:1.387e+10 3rd Qu.:1.616e+08 3rd Qu.: 985.94   
## Max. :10005712 Max. :1.520e+12 Max. :6.587e+09 Max. :149363.64   
##   
## RISK\_SCORE RISK\_RATNG RISK\_SPCTL EAL\_SCORE   
## Min. : 0.03182 Length:3231 Min. : 0.3937 Min. : 0.03095   
## 1st Qu.: 25.02386 Class :character 1st Qu.: 25.7963 1st Qu.: 25.02321   
## Median : 50.01591 Mode :character Median : 50.7463 Median : 50.01548   
## Mean : 50.01591 Mean : 50.8113 Mean : 50.01548   
## 3rd Qu.: 75.00795 3rd Qu.: 75.8621 3rd Qu.: 75.00774   
## Max. :100.00000 Max. :100.0000 Max. :100.00000   
## NA's :88 NA's :88   
## EAL\_RATNG EAL\_SPCTL SOVI\_SCORE SOVI\_RATNG   
## Length:3231 Min. : 0.3937 Min. : 0.00 Length:3231   
## Class :character 1st Qu.: 25.8199 1st Qu.: 25.62 Class :character   
## Mode :character Median : 50.7874 Median : 51.24 Mode :character   
## Mean : 50.8666 Mean : 50.88   
## 3rd Qu.: 75.8621 3rd Qu.: 76.58   
## Max. :100.0000 Max. :100.00   
## NA's :10   
## SOVI\_SPCTL RESL\_SCORE RESL\_RATNG RESL\_SPCTL   
## Min. :0.003937 Min. : 0 Length:3231 Min. :0.00394   
## 1st Qu.:0.257862 1st Qu.: 25 Class :character 1st Qu.:0.25796   
## Median :0.507463 Median : 50 Mode :character Median :0.50746   
## Mean :0.508089 Mean : 50 Mean :0.50811   
## 3rd Qu.:0.758621 3rd Qu.: 75 3rd Qu.:0.75862   
## Max. :1.000000 Max. :100 Max. :1.00000   
## NA's :10 NA's :88 NA's :88   
## AVLN\_EVNTS AVLN\_RISKS AVLN\_RISKR CFLD\_EVNTS   
## Min. : 0.000 Min. : 0.4808 Length:3231 Mode:logical   
## 1st Qu.: 1.000 1st Qu.: 25.3606 Class :character NA's:3231   
## Median : 2.000 Median : 50.2404 Mode :character   
## Mean : 6.702 Mean : 50.2404   
## 3rd Qu.: 7.250 3rd Qu.: 75.1202   
## Max. :69.000 Max. :100.0000   
## NA's :3023 NA's :3023   
## CFLD\_RISKS CFLD\_RISKR CWAV\_EVNTS CWAV\_RISKS   
## Min. : 0.00 Length:3231 Min. : 0.000 Min. : 0.00   
## 1st Qu.: 25.15 Class :character 1st Qu.: 0.000 1st Qu.: 0.00   
## Median : 50.10 Mode :character Median : 2.309 Median : 50.02   
## Mean : 48.98 Mean : 7.460 Mean : 46.41   
## 3rd Qu.: 75.05 3rd Qu.: 9.000 3rd Qu.: 75.01   
## Max. :100.00 Max. :93.000 Max. :100.00   
## NA's :2734 NA's :88   
## CWAV\_RISKR DRGT\_EVNTS DRGT\_RISKS DRGT\_RISKR   
## Length:3231 Min. : 0.0 Min. : 0.00 Length:3231   
## Class :character 1st Qu.: 84.0 1st Qu.: 25.02 Class :character   
## Mode :character Median : 301.0 Median : 50.02 Mode :character   
## Mean : 529.7 Mean : 48.92   
## 3rd Qu.: 784.0 3rd Qu.: 75.01   
## Max. :3290.0 Max. :100.00   
## NA's :7 NA's :88   
## ERQK\_EVNTS ERQK\_RISKS ERQK\_RISKR HAIL\_EVNTS   
## Mode:logical Min. : 0.00 Length:3231 Min. : 0.0   
## NA's:3231 1st Qu.: 25.02 Class :character 1st Qu.: 58.0   
## Median : 50.02 Mode :character Median :115.0   
## Mean : 50.02 Mean :120.4   
## 3rd Qu.: 75.01 3rd Qu.:162.0   
## Max. :100.00 Max. :432.0   
## NA's :88 NA's :7   
## HAIL\_RISKS HAIL\_RISKR HWAV\_EVNTS HWAV\_RISKS   
## Min. : 0.00 Length:3231 Min. : 0.000 Min. : 0.00   
## 1st Qu.: 25.02 Class :character 1st Qu.: 1.990 1st Qu.: 25.02   
## Median : 50.02 Mode :character Median : 9.004 Median : 50.02   
## Mean : 50.01 Mean : 15.368 Mean : 48.54   
## 3rd Qu.: 75.01 3rd Qu.: 18.000 3rd Qu.: 75.01   
## Max. :100.00 Max. :254.394 Max. :100.00   
## NA's :88 NA's :88   
## HWAV\_RISKR HRCN\_EVNTS HRCN\_RISKS HRCN\_RISKR   
## Length:3231 Min. : 0.00 Min. : 0.00 Length:3231   
## Class :character 1st Qu.: 1.00 1st Qu.: 25.03 Class :character   
## Mode :character Median : 4.00 Median : 50.02 Mode :character   
## Mean :10.54 Mean : 50.02   
## 3rd Qu.:15.00 3rd Qu.: 75.01   
## Max. :98.00 Max. :100.00   
## NA's :918 NA's :1002   
## ISTM\_EVNTS ISTM\_RISKS ISTM\_RISKR LNDS\_EVNTS   
## Min. : 0.00 Min. : 0.03331 Length:3231 Min. : 0.00   
## 1st Qu.: 19.00 1st Qu.: 25.02498 Class :character 1st Qu.: 0.00   
## Median : 41.00 Median : 50.01666 Mode :character Median : 0.00   
## Mean : 43.85 Mean : 50.01666 Mean : 1.14   
## 3rd Qu.: 63.00 3rd Qu.: 75.00833 3rd Qu.: 0.00   
## Max. :201.00 Max. :100.00000 Max. :114.00   
## NA's :229 NA's :229 NA's :40   
## LNDS\_RISKS LNDS\_RISKR LTNG\_EVNTS LTNG\_RISKS   
## Min. : 0.00 Length:3231 Min. : 4.0 Min. : 0.03218   
## 1st Qu.: 25.02 Class :character 1st Qu.: 704.8 1st Qu.: 25.02413   
## Median : 50.02 Mode :character Median :1333.0 Median : 50.01609   
## Mean : 50.00 Mean :1270.9 Mean : 50.01609   
## 3rd Qu.: 75.01 3rd Qu.:1811.0 3rd Qu.: 75.00804   
## Max. :100.00 Max. :4741.0 Max. :100.00000   
## NA's :118 NA's :123 NA's :123   
## LTNG\_RISKR RFLD\_EVNTS RFLD\_RISKS RFLD\_RISKR   
## Length:3231 Min. : 0.00 Min. : 0.00 Length:3231   
## Class :character 1st Qu.: 12.50 1st Qu.: 25.02 Class :character   
## Mode :character Median : 24.00 Median : 50.02 Mode :character   
## Mean : 32.23 Mean : 49.99   
## 3rd Qu.: 44.00 3rd Qu.: 75.01   
## Max. :304.00 Max. :100.00   
## NA's :88   
## SWND\_EVNTS SWND\_RISKS SWND\_RISKR TRND\_EVNTS   
## Min. : 0.00 Min. : 0.00 Length:3231 Min. : 0.00   
## 1st Qu.: 34.00 1st Qu.: 25.02 Class :character 1st Qu.: 6.00   
## Median : 81.00 Median : 50.02 Mode :character Median : 14.00   
## Mean : 92.93 Mean : 50.01 Mean : 18.36   
## 3rd Qu.:147.00 3rd Qu.: 75.01 3rd Qu.: 26.00   
## Max. :270.00 Max. :100.00 Max. :197.00   
## NA's :7 NA's :88 NA's :7   
## TRND\_RISKS TRND\_RISKR TSUN\_EVNTS TSUN\_RISKS   
## Min. : 0.03182 Length:3231 Min. : 0.00 Min. : 0.00   
## 1st Qu.: 25.02386 Class :character 1st Qu.: 1.00 1st Qu.: 26.01   
## Median : 50.01591 Mode :character Median : 2.00 Median : 50.68   
## Mean : 50.01591 Mean : 12.21 Mean : 48.19   
## 3rd Qu.: 75.00795 3rd Qu.: 12.00 3rd Qu.: 75.34   
## Max. :100.00000 Max. :138.00 Max. :100.00   
## NA's :88 NA's :3103 NA's :3157   
## TSUN\_RISKR VLCN\_EVNTS VLCN\_RISKS VLCN\_RISKR   
## Length:3231 Min. : 0.000 Min. : 0.00 Length:3231   
## Class :character 1st Qu.: 1.000 1st Qu.: 25.84 Class :character   
## Mode :character Median : 1.000 Median : 50.56 Mode :character   
## Mean : 1.811 Mean : 48.84   
## 3rd Qu.: 2.000 3rd Qu.: 75.28   
## Max. :20.000 Max. :100.00   
## NA's :3125 NA's :3142   
## WFIR\_EVNTS WFIR\_RISKS WFIR\_RISKR WNTW\_EVNTS   
## Mode:logical Min. : 0.00 Length:3231 Min. : 0.00   
## NA's:3231 1st Qu.: 25.02 Class :character 1st Qu.: 18.91   
## Median : 50.02 Mode :character Median : 37.00   
## Mean : 50.02 Mean : 50.64   
## 3rd Qu.: 75.01 3rd Qu.: 67.95   
## Max. :100.00 Max. :390.01   
## NA's :88   
## WNTW\_RISKS WNTW\_RISKR NRI\_VER   
## Min. : 0.00 Length:3231 Length:3231   
## 1st Qu.: 25.02 Class :character Class :character   
## Median : 50.02 Mode :character Mode :character   
## Mean : 50.00   
## 3rd Qu.: 75.01   
## Max. :100.00   
## NA's :88

str(nri\_data) # Examine the structure of the dataset

## 'data.frame': 3231 obs. of 75 variables:  
## $ OID\_ : int 1 2 3 4 5 6 7 8 9 10 ...  
## $ STATE : chr "Alabama" "Alabama" "Alabama" "Alabama" ...  
## $ STATEABBRV: chr "AL" "AL" "AL" "AL" ...  
## $ COUNTY : chr "Autauga" "Baldwin" "Barbour" "Bibb" ...  
## $ POPULATION: int 58764 231365 25160 22239 58992 10326 19015 116250 34738 24933 ...  
## $ BUILDVALUE: num 9.12e+09 4.60e+10 4.85e+09 3.15e+09 7.82e+09 ...  
## $ AGRIVALUE : num 2.46e+07 1.38e+08 1.21e+08 4.82e+06 2.79e+08 ...  
## $ AREA : num 610 2048 914 632 657 ...  
## $ RISK\_SCORE: num 49.2 97.7 56.2 32.5 65.1 ...  
## $ RISK\_RATNG: chr "Relatively Low" "Relatively High" "Relatively Low" "Very Low" ...  
## $ RISK\_SPCTL: num 34.3 98.5 41.8 19.4 55.2 ...  
## $ EAL\_SCORE : num 50.9 98.2 44.9 30.5 63.6 ...  
## $ EAL\_RATNG : chr "Very Low" "Relatively High" "Very Low" "Very Low" ...  
## $ EAL\_SPCTL : num 40.3 98.5 37.3 20.9 58.2 ...  
## $ SOVI\_SCORE: num 51.3 31 99.3 80.8 51.4 ...  
## $ SOVI\_RATNG: chr "Relatively Moderate" "Relatively Low" "Very High" "Very High" ...  
## $ SOVI\_SPCTL: num 0.209 0.0299 1 0.7313 0.2239 ...  
## $ RESL\_SCORE: num 51.81 86.12 6.24 19.73 22.82 ...  
## $ RESL\_RATNG: chr "Relatively Moderate" "Very High" "Very Low" "Very Low" ...  
## $ RESL\_SPCTL: num 0.791 1 0.0299 0.3134 0.4627 ...  
## $ AVLN\_EVNTS: int NA NA NA NA NA NA NA NA NA NA ...  
## $ AVLN\_RISKS: num NA NA NA NA NA NA NA NA NA NA ...  
## $ AVLN\_RISKR: chr "Not Applicable" "Not Applicable" "Not Applicable" "Not Applicable" ...  
## $ CFLD\_EVNTS: logi NA NA NA NA NA NA ...  
## $ CFLD\_RISKS: num NA 55.9 NA NA NA ...  
## $ CFLD\_RISKR: chr "Not Applicable" "Relatively Low" "Not Applicable" "Not Applicable" ...  
## $ CWAV\_EVNTS: num 0 0 0 0 0 0 0 0 0 0 ...  
## $ CWAV\_RISKS: num 0 0 0 0 0 0 0 0 0 0 ...  
## $ CWAV\_RISKR: chr "No Rating" "No Rating" "No Rating" "No Rating" ...  
## $ DRGT\_EVNTS: int 651 434 1064 721 665 1022 567 672 1428 784 ...  
## $ DRGT\_RISKS: num 50.7 86.8 80.7 32.4 52.1 ...  
## $ DRGT\_RISKR: chr "Relatively Low" "Relatively Moderate" "Relatively Low" "Very Low" ...  
## $ ERQK\_EVNTS: logi NA NA NA NA NA NA ...  
## $ ERQK\_RISKS: num 57.1 69.2 44 61.7 73.1 ...  
## $ ERQK\_RISKR: chr "Very Low" "Relatively Low" "Very Low" "Very Low" ...  
## $ HAIL\_EVNTS: int 96 43 65 118 174 80 60 176 131 182 ...  
## $ HAIL\_RISKS: num 57.1 52.9 40 43.7 43.7 ...  
## $ HAIL\_RISKR: chr "Relatively Low" "Relatively Low" "Very Low" "Very Low" ...  
## $ HWAV\_EVNTS: num 6 12.4 6 6 6 ...  
## $ HWAV\_RISKS: num 87.1 91.1 69.7 67.2 82.4 ...  
## $ HWAV\_RISKR: chr "Relatively Moderate" "Relatively Moderate" "Relatively Low" "Relatively Low" ...  
## $ HRCN\_EVNTS: int 13 50 21 11 6 20 17 5 15 5 ...  
## $ HRCN\_RISKS: num 67.7 98.9 77.2 51.1 54 ...  
## $ HRCN\_RISKR: chr "Relatively Low" "Relatively High" "Relatively Low" "Very Low" ...  
## $ ISTM\_EVNTS: int 28 11 27 28 35 34 16 19 35 29 ...  
## $ ISTM\_RISKS: num 23.9 32.6 18.9 43.6 59.9 ...  
## $ ISTM\_RISKR: chr "Very Low" "Relatively Low" "Very Low" "Relatively Low" ...  
## $ LNDS\_EVNTS: int 0 1 0 0 0 0 0 1 0 0 ...  
## $ LNDS\_RISKS: num 41.8 72.5 70.8 41.9 46.7 ...  
## $ LNDS\_RISKR: chr "Relatively Low" "Relatively Low" "Relatively Low" "Relatively Low" ...  
## $ LTNG\_EVNTS: int 1737 2560 1643 1861 1954 1586 1886 1941 1358 1700 ...  
## $ LTNG\_RISKS: num 54.2 99.4 82.3 39.8 84.1 ...  
## $ LTNG\_RISKR: chr "Relatively Low" "Very High" "Relatively Moderate" "Relatively Low" ...  
## $ RFLD\_EVNTS: int 26 65 6 16 28 8 12 24 18 19 ...  
## $ RFLD\_RISKS: num 52.2 87.9 14 25.2 34.3 ...  
## $ RFLD\_RISKR: chr "Relatively Low" "Relatively Moderate" "Very Low" "Very Low" ...  
## $ SWND\_EVNTS: int 45 52 50 50 146 52 58 95 41 101 ...  
## $ SWND\_RISKS: num 44 53.8 35.5 23.3 76.1 ...  
## $ SWND\_RISKR: chr "Relatively Low" "Relatively Low" "Relatively Low" "Relatively Low" ...  
## $ TRND\_EVNTS: int 39 68 34 27 50 21 23 28 19 15 ...  
## $ TRND\_RISKS: num 73.8 91.4 73.9 72 89.7 ...  
## $ TRND\_RISKR: chr "Relatively Moderate" "Relatively Moderate" "Relatively Moderate" "Relatively Moderate" ...  
## $ TSUN\_EVNTS: int NA NA NA NA NA NA NA NA NA NA ...  
## $ TSUN\_RISKS: num NA NA NA NA NA NA NA NA NA NA ...  
## $ TSUN\_RISKR: chr "Not Applicable" "Insufficient Data" "Not Applicable" "Not Applicable" ...  
## $ VLCN\_EVNTS: int NA NA NA NA NA NA NA NA NA NA ...  
## $ VLCN\_RISKS: num NA NA NA NA NA NA NA NA NA NA ...  
## $ VLCN\_RISKR: chr "Not Applicable" "Not Applicable" "Not Applicable" "Not Applicable" ...  
## $ WFIR\_EVNTS: logi NA NA NA NA NA NA ...  
## $ WFIR\_RISKS: num 29.6 92.7 27.3 15 19.6 ...  
## $ WFIR\_RISKR: chr "Very Low" "Relatively Moderate" "Very Low" "Very Low" ...  
## $ WNTW\_EVNTS: num 7 2.42 3 12 14 ...  
## $ WNTW\_RISKS: num 12.2 52.1 19.5 11.1 21.4 ...  
## $ WNTW\_RISKR: chr "Very Low" "Relatively Low" "Very Low" "Very Low" ...  
## $ NRI\_VER : chr "23-Mar" "23-Mar" "23-Mar" "23-Mar" ...

any(is.na(nri\_data$STATE)) # Check for NAs in State column

## [1] FALSE

any(is.na(nri\_data$COUNTY)) # Check for NAs in County column

## [1] FALSE

any(is.na(nri\_data$RISK\_SCORE)) # Check for NAs in Risk Score

## [1] TRUE

nri\_data <- nri\_data[complete.cases(nri\_data$RISK\_SCORE), ] # Remove rows with NAs in the "Risk Score" column  
any(is.na(nri\_data$RISK\_SCORE)) # Check to ensure all NAs are removed

## [1] FALSE

#make the columns and data lowercase for ease  
names(nri\_data) <- tolower(names(nri\_data)) # Make all col names lowercase  
nri\_data$county <- tolower(nri\_data$county) # Make all values lowercase in county column  
nri\_data$state <- tolower(nri\_data$state) # Make all values lowercase in state column   
nri\_data$fulllocation <- paste(nri\_data$county, nri\_data$state, sep = ", ") # merge county and state together in a column