# Intro to Dat Science - HW 2

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### Attribution statement: (choose only one and delete the rest)

# 1. I did this homework by myself, with help from the book and the professor.

### Reminders of things to practice from last week:

Assignment arrow <- The combine command c( ) Descriptive statistics mean( ) sum( ) max( ) Arithmetic operators + - \* / Boolean operators > < >= <= == !=

**This Week:** Explore the **quakes** dataset (which is included in R). Copy the **quakes** dataset into a new dataframe (call it **myQuakes**), so that if you need to start over, you can do so easily (by copying quakes into myQuakes again). Summarize the variables in **myQuakes**. Also explore the structure of the dataframe

library(tidyverse)

myQuakes <- quakes  
summary(myQuakes)

## lat long depth mag   
## Min. :-38.59 Min. :165.7 Min. : 40.0 Min. :4.00   
## 1st Qu.:-23.47 1st Qu.:179.6 1st Qu.: 99.0 1st Qu.:4.30   
## Median :-20.30 Median :181.4 Median :247.0 Median :4.60   
## Mean :-20.64 Mean :179.5 Mean :311.4 Mean :4.62   
## 3rd Qu.:-17.64 3rd Qu.:183.2 3rd Qu.:543.0 3rd Qu.:4.90   
## Max. :-10.72 Max. :188.1 Max. :680.0 Max. :6.40   
## stations   
## Min. : 10.00   
## 1st Qu.: 18.00   
## Median : 27.00   
## Mean : 33.42   
## 3rd Qu.: 42.00   
## Max. :132.00

str(myQuakes)

## 'data.frame': 1000 obs. of 5 variables:  
## $ lat : num -20.4 -20.6 -26 -18 -20.4 ...  
## $ long : num 182 181 184 182 182 ...  
## $ depth : int 562 650 42 626 649 195 82 194 211 622 ...  
## $ mag : num 4.8 4.2 5.4 4.1 4 4 4.8 4.4 4.7 4.3 ...  
## $ stations: int 41 15 43 19 11 12 43 15 35 19 ...

**Step 1:** Explore the earthquake magnitude variable called **mag**

1. What is the average magnitude? Use mean() or summary():

mean(myQuakes$mag)

## [1] 4.6204

1. What is the magnitude of the largest earthquake? Use max() or summary() and save the result in a variable called **maxQuake**:

maxQuake <- max(myQuakes$mag)  
maxQuake

## [1] 6.4

1. What is the magnitude of the smallest earthquake? Use min() or summary() and save the result in a variable called **minQuake**:

minQuake <- min(myQuakes$mag)  
minQuake

## [1] 4

1. Output the **third row** of the dataframe

myQuakes[3,]

## lat long depth mag stations  
## 3 -26 184.1 42 5.4 43

E. Create a new dataframe, with only the rows where the **magnitude is greater than 4**. How many rows are in that dataframe (use code, do not count by looking at the output)

newQuakes <- myQuakes[myQuakes$mag>4,]  
nrow(newQuakes)

## [1] 954

1. Create a **sorted dataframe** based on magnitude and store it in **quakeSorted1**. Do the sort two different ways, once with arrange() and then with order()

#quakeSorted1 <- myQuakes %>% arrange(mag)  
#quakeSorted1  
  
# Added to comments because it was not recognizing the %>% symbols and was unable to knit  
  
quakeSorted1 <- myQuakes[order(myQuakes$mag),]  
quakeSorted1

## lat long depth mag stations  
## 5 -20.42 181.96 649 4.0 11  
## 6 -19.68 184.31 195 4.0 12  
## 26 -17.94 181.49 537 4.0 15  
## 34 -23.55 180.80 349 4.0 10  
## 52 -19.26 184.42 223 4.0 15  
## 58 -22.06 180.60 584 4.0 11  
## 71 -15.31 185.80 152 4.0 11  
## 85 -17.70 181.70 450 4.0 11  
## 96 -19.73 182.40 375 4.0 18  
## 113 -19.06 182.45 477 4.0 16  
## 142 -20.65 181.40 582 4.0 14  
## 150 -17.90 181.50 573 4.0 19  
## 202 -17.70 182.20 445 4.0 12  
## 236 -23.54 179.93 574 4.0 12  
## 284 -17.70 185.00 383 4.0 10  
## 298 -17.94 181.51 601 4.0 16  
## 299 -30.64 181.20 175 4.0 16  
## 362 -16.90 185.72 135 4.0 22  
## 389 -10.72 165.99 195 4.0 14  
## 433 -18.55 182.23 563 4.0 17  
## 483 -22.70 183.30 180 4.0 13  
## 533 -21.00 183.20 296 4.0 16  
## 598 -17.02 182.93 406 4.0 17  
## 637 -19.51 183.97 280 4.0 16  
## 698 -15.43 185.19 249 4.0 11  
## 722 -17.91 181.48 555 4.0 17  
## 727 -17.10 182.80 390 4.0 14  
## 733 -30.30 180.80 275 4.0 14  
## 750 -25.60 180.30 440 4.0 12  
## 770 -20.70 186.30 80 4.0 10  
## 772 -16.40 182.73 391 4.0 16  
## 775 -21.60 180.50 595 4.0 22  
## 780 -17.90 181.50 589 4.0 12  
## 794 -28.00 182.00 199 4.0 16  
## 816 -22.12 180.49 532 4.0 14  
## 826 -21.62 182.40 350 4.0 12  
## 834 -19.70 182.44 397 4.0 12  
## 856 -18.50 185.40 243 4.0 11  
## 861 -21.03 180.78 638 4.0 14  
## 875 -17.80 181.20 530 4.0 15  
## 900 -17.82 181.27 538 4.0 33  
## 919 -25.06 182.80 133 4.0 14  
## 937 -18.14 181.71 574 4.0 20  
## 955 -23.49 180.06 530 4.0 23  
## 989 -17.86 181.30 614 4.0 12  
## 994 -17.95 181.37 642 4.0 17  
## 4 -17.97 181.66 626 4.1 19  
## 39 -17.66 181.40 585 4.1 17  
## 62 -21.16 182.40 260 4.1 12  
## 67 -20.14 181.60 587 4.1 13  
## 77 -19.21 184.70 197 4.1 11  
## 101 -16.98 185.61 108 4.1 12  
## 161 -17.98 180.50 626 4.1 19  
## 173 -20.20 180.90 627 4.1 11  
## 174 -15.20 184.68 99 4.1 14  
## 175 -15.03 182.29 399 4.1 10  
## 179 -17.84 181.48 542 4.1 20  
## 185 -20.45 181.85 534 4.1 14  
## 194 -24.08 179.50 605 4.1 21  
## 213 -28.25 181.71 226 4.1 19  
## 242 -24.36 182.84 148 4.1 16  
## 273 -23.80 179.90 498 4.1 12  
## 307 -17.68 181.36 515 4.1 19  
## 317 -17.32 181.03 497 4.1 13  
## 353 -17.46 181.32 573 4.1 17  
## 370 -23.44 182.93 158 4.1 20  
## 423 -17.04 186.80 70 4.1 22  
## 431 -18.40 183.40 343 4.1 10  
## 482 -14.85 184.87 294 4.1 10  
## 485 -17.90 181.30 593 4.1 13  
## 488 -17.61 181.20 537 4.1 11  
## 495 -17.14 185.31 223 4.1 15  
## 515 -17.81 181.82 598 4.1 14  
## 522 -19.22 182.54 570 4.1 22  
## 595 -21.79 185.00 74 4.1 15  
## 671 -17.80 181.32 539 4.1 12  
## 687 -18.89 181.24 655 4.1 14  
## 690 -17.60 181.50 548 4.1 10  
## 720 -17.20 182.90 383 4.1 11  
## 738 -25.14 178.42 554 4.1 15  
## 760 -16.43 186.73 75 4.1 20  
## 763 -17.78 185.33 223 4.1 10  
## 767 -19.10 184.52 230 4.1 16  
## 776 -21.77 181.00 618 4.1 10  
## 791 -18.07 181.65 593 4.1 16  
## 793 -20.21 181.90 576 4.1 16  
## 806 -19.13 184.97 210 4.1 22  
## 820 -22.10 180.40 603 4.1 11  
## 823 -22.14 179.62 587 4.1 23  
## 832 -15.70 185.10 70 4.1 15  
## 835 -19.40 182.29 326 4.1 15  
## 836 -15.85 185.90 121 4.1 17  
## 846 -17.56 181.23 580 4.1 16  
## 851 -15.18 185.93 77 4.1 16  
## 858 -15.65 185.17 315 4.1 15  
## 863 -17.93 181.89 567 4.1 27  
## 895 -17.74 181.25 559 4.1 16  
## 924 -18.40 181.77 600 4.1 11  
## 954 -23.47 179.95 543 4.1 21  
## 964 -19.69 184.23 223 4.1 23  
## 966 -17.99 181.59 595 4.1 26  
## 2 -20.62 181.03 650 4.2 15  
## 22 -10.98 166.32 211 4.2 12  
## 51 -18.75 182.35 554 4.2 13  
## 55 -20.10 182.16 489 4.2 16  
## 79 -21.81 181.71 323 4.2 15  
## 89 -15.43 186.30 123 4.2 16  
## 94 -19.72 169.71 271 4.2 14  
## 95 -15.44 185.26 224 4.2 21  
## 106 -19.44 183.50 293 4.2 15  
## 112 -16.85 182.31 388 4.2 14  
## 116 -26.13 178.31 609 4.2 25  
## 120 -18.96 169.48 248 4.2 13  
## 127 -19.30 183.84 517 4.2 21  
## 132 -17.05 181.22 527 4.2 24  
## 140 -18.84 184.16 210 4.2 17  
## 145 -14.31 173.50 614 4.2 23  
## 146 -20.10 184.40 186 4.2 10  
## 154 -11.80 165.80 112 4.2 20  
## 157 -11.75 166.07 69 4.2 14  
## 184 -20.30 183.00 375 4.2 15  
## 196 -20.36 181.19 637 4.2 23  
## 210 -20.20 182.30 533 4.2 11  
## 217 -26.67 182.40 186 4.2 17  
## 220 -18.31 182.39 342 4.2 14  
## 224 -20.37 182.10 397 4.2 22  
## 227 -21.55 182.90 207 4.2 18  
## 250 -19.15 169.50 150 4.2 12  
## 256 -20.32 180.88 680 4.2 22  
## 259 -23.81 179.36 521 4.2 23  
## 265 -19.41 183.05 300 4.2 16  
## 274 -20.16 181.99 504 4.2 11  
## 282 -22.32 180.54 565 4.2 12  
## 287 -19.30 180.60 671 4.2 16  
## 327 -21.04 181.20 483 4.2 10  
## 341 -27.22 182.28 65 4.2 14  
## 361 -17.98 181.58 590 4.2 14  
## 369 -15.83 182.51 423 4.2 21  
## 387 -17.82 181.49 573 4.2 14  
## 394 -17.46 181.90 417 4.2 14  
## 396 -23.70 179.60 646 4.2 21  
## 410 -33.20 181.60 153 4.2 21  
## 430 -17.47 180.96 546 4.2 23  
## 493 -23.45 180.23 520 4.2 19  
## 494 -16.04 183.54 384 4.2 23  
## 499 -24.03 180.22 508 4.2 23  
## 506 -19.41 182.30 589 4.2 19  
## 538 -15.96 166.69 150 4.2 20  
## 542 -15.29 166.90 100 4.2 15  
## 556 -23.12 184.42 104 4.2 17  
## 557 -23.65 184.46 93 4.2 16  
## 565 -25.04 180.97 393 4.2 21  
## 566 -19.92 183.91 264 4.2 23  
## 614 -19.60 181.87 597 4.2 18  
## 628 -25.25 179.86 491 4.2 23  
## 631 -21.46 181.02 584 4.2 18  
## 639 -17.40 186.54 85 4.2 28  
## 650 -20.48 181.38 556 4.2 13  
## 660 -17.88 180.58 622 4.2 23  
## 665 -18.44 181.04 624 4.2 21  
## 686 -18.69 169.10 218 4.2 27  
## 688 -17.61 183.32 356 4.2 15  
## 693 -20.61 182.44 518 4.2 10  
## 701 -13.90 167.18 221 4.2 21  
## 718 -26.10 182.50 133 4.2 17  
## 734 -24.89 179.67 498 4.2 14  
## 751 -18.04 181.84 611 4.2 20  
## 779 -10.80 165.80 175 4.2 12  
## 831 -30.63 180.90 334 4.2 28  
## 833 -19.20 184.37 220 4.2 18  
## 845 -26.06 180.05 432 4.2 19  
## 864 -20.87 181.70 560 4.2 13  
## 867 -22.85 181.37 397 4.2 15  
## 868 -17.08 185.96 180 4.2 29  
## 871 -20.91 181.57 530 4.2 20  
## 877 -18.85 182.20 501 4.2 23  
## 881 -18.40 184.84 221 4.2 18  
## 882 -21.20 181.40 560 4.2 12  
## 884 -11.70 166.30 139 4.2 15  
## 892 -22.24 180.28 601 4.2 21  
## 905 -17.46 181.42 524 4.2 16  
## 906 -17.44 181.33 545 4.2 37  
## 907 -24.71 179.85 477 4.2 34  
## 917 -19.57 184.47 202 4.2 28  
## 932 -23.47 180.21 553 4.2 23  
## 939 -20.77 181.16 568 4.2 12  
## 947 -18.98 182.32 442 4.2 22  
## 968 -21.40 180.74 613 4.2 20  
## 976 -17.03 185.74 178 4.2 32  
## 986 -12.37 166.93 291 4.2 16  
## 995 -17.70 188.10 45 4.2 10  
## 10 -17.47 179.59 622 4.3 19  
## 16 -15.94 184.95 306 4.3 11  
## 36 -25.82 179.33 600 4.3 13  
## 44 -15.49 186.04 94 4.3 26  
## 49 -24.12 180.08 493 4.3 21  
## 54 -21.37 180.67 593 4.3 13  
## 60 -24.20 179.20 530 4.3 12  
## 73 -11.55 166.20 96 4.3 14  
## 76 -23.54 180.04 564 4.3 15  
## 84 -20.12 183.40 284 4.3 15  
## 86 -19.66 184.31 170 4.3 15  
## 90 -15.41 186.44 69 4.3 42  
## 122 -19.90 178.90 81 4.3 11  
## 130 -19.19 183.51 307 4.3 19  
## 135 -21.30 180.82 624 4.3 14  
## 153 -23.83 182.56 229 4.3 24  
## 158 -24.81 180.00 452 4.3 19  
## 171 -17.82 181.83 640 4.3 24  
## 182 -24.60 183.50 67 4.3 25  
## 187 -22.30 181.90 309 4.3 11  
## 199 -20.41 181.74 538 4.3 31  
## 201 -19.67 182.18 360 4.3 23  
## 206 -21.97 182.32 261 4.3 13  
## 212 -16.17 184.10 338 4.3 13  
## 215 -23.55 180.27 535 4.3 22  
## 216 -20.94 181.58 573 4.3 21  
## 232 -24.64 180.81 397 4.3 24  
## 247 -17.95 181.65 619 4.3 26  
## 278 -24.78 179.22 492 4.3 16  
## 305 -14.99 171.39 637 4.3 21  
## 344 -27.54 182.50 68 4.3 12  
## 345 -27.20 182.39 69 4.3 14  
## 346 -27.71 182.47 103 4.3 11  
## 364 -32.14 179.90 406 4.3 19  
## 391 -20.36 186.16 102 4.3 21  
## 403 -30.40 181.40 40 4.3 17  
## 406 -17.95 181.50 593 4.3 16  
## 407 -20.51 182.30 492 4.3 23  
## 414 -25.04 180.10 481 4.3 15  
## 419 -34.10 181.80 246 4.3 23  
## 421 -24.19 180.38 484 4.3 27  
## 436 -27.63 182.93 80 4.3 14  
## 441 -12.66 166.37 165 4.3 18  
## 447 -15.72 185.64 138 4.3 21  
## 451 -26.46 182.50 184 4.3 11  
## 452 -24.09 179.68 538 4.3 21  
## 454 -23.19 182.80 237 4.3 18  
## 455 -20.81 184.70 162 4.3 20  
## 473 -16.95 185.94 95 4.3 12  
## 518 -20.75 184.52 144 4.3 25  
## 521 -20.66 185.77 69 4.3 25  
## 550 -21.16 181.41 543 4.3 17  
## 551 -20.65 182.22 506 4.3 24  
## 582 -20.57 181.33 605 4.3 18  
## 591 -20.95 181.06 611 4.3 20  
## 619 -18.07 181.54 546 4.3 28  
## 635 -20.08 183.22 294 4.3 18  
## 684 -18.19 181.74 616 4.3 17  
## 691 -17.96 181.40 655 4.3 20  
## 705 -19.45 184.48 246 4.3 15  
## 710 -20.97 181.72 487 4.3 16  
## 740 -25.28 181.17 367 4.3 25  
## 761 -20.70 184.30 182 4.3 17  
## 773 -19.60 184.53 199 4.3 21  
## 774 -21.63 180.77 592 4.3 21  
## 778 -21.05 180.90 616 4.3 10  
## 784 -20.40 186.10 74 4.3 22  
## 799 -22.90 183.80 71 4.3 19  
## 800 -18.11 181.63 568 4.3 36  
## 809 -20.90 182.02 402 4.3 18  
## 814 -23.73 183.00 118 4.3 11  
## 824 -21.48 182.44 364 4.3 20  
## 859 -30.01 181.15 210 4.3 17  
## 860 -13.16 167.24 278 4.3 17  
## 876 -18.94 182.43 566 4.3 20  
## 894 -21.07 183.78 180 4.3 25  
## 909 -19.17 169.53 268 4.3 21  
## 923 -17.98 181.61 598 4.3 27  
## 941 -20.83 181.01 622 4.3 15  
## 956 -23.85 180.26 497 4.3 32  
## 963 -12.57 166.72 137 4.3 20  
## 979 -18.83 182.26 575 4.3 11  
## 984 -27.99 183.50 71 4.3 22  
## 991 -20.73 181.42 575 4.3 18  
## 992 -15.45 181.42 409 4.3 27  
## 8 -28.11 181.93 194 4.4 15  
## 11 -21.44 180.69 583 4.4 13  
## 13 -18.54 182.11 554 4.4 19  
## 14 -21.00 181.66 600 4.4 10  
## 19 -23.50 179.78 570 4.4 13  
## 20 -22.63 180.31 598 4.4 18  
## 23 -23.30 180.16 512 4.4 18  
## 30 -19.84 182.37 328 4.4 17  
## 40 -18.82 169.33 230 4.4 11  
## 43 -24.97 179.82 511 4.4 23  
## 48 -11.77 166.32 70 4.4 18  
## 56 -19.85 182.13 562 4.4 31  
## 59 -17.80 181.35 535 4.4 23  
## 75 -17.70 181.23 546 4.4 35  
## 107 -34.89 180.60 42 4.4 25  
## 115 -26.20 178.35 606 4.4 21  
## 125 -31.24 180.60 328 4.4 18  
## 144 -29.91 181.43 205 4.4 34  
## 147 -17.80 185.17 97 4.4 22  
## 183 -19.88 184.30 161 4.4 17  
## 219 -20.21 183.83 242 4.4 29  
## 233 -16.00 182.82 431 4.4 16  
## 237 -28.23 182.68 74 4.4 20  
## 255 -29.10 182.10 179 4.4 19  
## 263 -19.06 169.01 158 4.4 10  
## 264 -17.88 181.47 562 4.4 27  
## 268 -18.73 168.80 82 4.4 14  
## 271 -19.76 181.41 105 4.4 15  
## 281 -30.72 180.10 413 4.4 22  
## 285 -17.95 184.68 260 4.4 21  
## 301 -13.09 169.28 654 4.4 22  
## 316 -17.40 181.02 479 4.4 14  
## 323 -19.83 182.04 575 4.4 23  
## 324 -29.50 182.31 129 4.4 14  
## 326 -26.10 182.30 49 4.4 11  
## 333 -27.33 182.60 42 4.4 11  
## 365 -18.80 169.21 221 4.4 16  
## 375 -20.31 184.06 249 4.4 21  
## 377 -18.20 181.60 553 4.4 14  
## 382 -13.47 167.14 226 4.4 26  
## 393 -20.94 181.26 556 4.4 21  
## 405 -15.70 184.50 118 4.4 30  
## 409 -23.61 180.23 475 4.4 26  
## 415 -21.50 185.20 139 4.4 15  
## 417 -14.43 167.26 151 4.4 17  
## 418 -32.70 181.70 211 4.4 40  
## 429 -19.47 169.15 149 4.4 15  
## 435 -21.80 183.20 325 4.4 19  
## 437 -18.89 169.48 259 4.4 21  
## 461 -15.66 186.80 45 4.4 11  
## 464 -18.05 180.86 632 4.4 15  
## 466 -20.90 181.90 556 4.4 17  
## 467 -15.61 167.50 135 4.4 21  
## 469 -17.68 181.11 568 4.4 22  
## 472 -18.00 185.48 143 4.4 29  
## 480 -19.60 185.20 125 4.4 13  
## 487 -34.40 180.50 201 4.4 41  
## 497 -15.90 185.30 57 4.4 19  
## 504 -13.07 166.87 132 4.4 24  
## 508 -11.76 165.96 45 4.4 51  
## 519 -19.50 186.90 58 4.4 20  
## 529 -15.26 183.13 393 4.4 28  
## 575 -18.18 182.04 609 4.4 26  
## 588 -24.96 179.87 480 4.4 25  
## 592 -21.58 181.90 409 4.4 19  
## 607 -22.00 185.50 52 4.4 18  
## 611 -30.09 182.40 51 4.4 18  
## 620 -12.85 165.67 75 4.4 30  
## 633 -28.56 183.59 53 4.4 20  
## 648 -15.48 186.73 82 4.4 17  
## 654 -23.10 180.12 533 4.4 27  
## 668 -15.85 184.83 299 4.4 30  
## 670 -18.60 184.28 255 4.4 31  
## 682 -20.16 184.27 210 4.4 27  
## 685 -15.35 186.40 98 4.4 17  
## 695 -25.23 179.86 476 4.4 29  
## 696 -23.90 179.90 579 4.4 16  
## 709 -21.56 183.23 271 4.4 36  
## 716 -13.36 172.76 618 4.4 18  
## 726 -18.76 169.71 287 4.4 23  
## 730 -21.26 181.69 487 4.4 20  
## 747 -30.51 181.30 203 4.4 20  
## 756 -12.16 167.03 264 4.4 14  
## 768 -19.85 184.51 184 4.4 26  
## 777 -21.80 183.60 213 4.4 17  
## 795 -20.74 180.70 589 4.4 27  
## 797 -18.91 169.46 248 4.4 33  
## 804 -12.93 169.52 663 4.4 30  
## 825 -18.54 168.93 100 4.4 17  
## 828 -15.50 185.30 93 4.4 25  
## 829 -15.67 185.23 66 4.4 34  
## 842 -15.80 185.25 82 4.4 39  
## 874 -22.09 180.58 580 4.4 22  
## 880 -18.10 181.63 592 4.4 28  
## 896 -23.87 180.15 524 4.4 22  
## 913 -15.28 185.98 162 4.4 36  
## 914 -20.27 181.51 609 4.4 32  
## 971 -25.79 182.38 172 4.4 14  
## 977 -20.77 183.71 251 4.4 47  
## 978 -28.10 183.50 42 4.4 17  
## 996 -25.93 179.54 470 4.4 22  
## 18 -17.83 181.50 590 4.5 21  
## 21 -20.84 181.16 576 4.5 17  
## 29 -20.97 181.47 582 4.5 25  
## 35 -16.30 186.00 48 4.5 10  
## 37 -18.73 169.23 206 4.5 17  
## 47 -26.40 181.70 329 4.5 24  
## 57 -22.70 181.00 445 4.5 17  
## 69 -20.42 181.86 530 4.5 27  
## 72 -19.86 184.35 201 4.5 30  
## 78 -12.11 167.06 265 4.5 23  
## 82 -23.84 180.99 367 4.5 27  
## 88 -23.64 179.96 538 4.5 26  
## 97 -27.24 181.11 365 4.5 21  
## 111 -15.75 185.23 280 4.5 28  
## 124 -19.22 182.43 571 4.5 23  
## 131 -17.43 185.43 189 4.5 22  
## 133 -19.52 168.98 63 4.5 21  
## 170 -18.89 169.42 239 4.5 27  
## 178 -17.42 185.16 206 4.5 22  
## 181 -18.04 181.75 640 4.5 47  
## 198 -24.00 182.75 175 4.5 14  
## 204 -26.72 183.35 190 4.5 36  
## 205 -12.95 169.09 629 4.5 19  
## 208 -20.32 181.69 508 4.5 14  
## 225 -23.77 180.16 505 4.5 26  
## 228 -16.24 185.75 154 4.5 22  
## 235 -23.84 180.13 525 4.5 15  
## 241 -20.08 182.74 298 4.5 33  
## 252 -14.85 167.24 97 4.5 26  
## 270 -21.29 180.85 607 4.5 23  
## 279 -22.00 180.52 561 4.5 19  
## 289 -18.07 181.57 572 4.5 26  
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## 590 -23.31 179.27 566 5.1 49  
## 615 -15.65 186.26 64 5.1 54  
## 618 -20.06 168.69 49 5.1 49  
## 624 -23.78 180.31 518 5.1 71  
## 629 -22.87 172.65 56 5.1 50  
## 657 -17.59 180.98 548 5.1 79  
## 708 -17.74 186.78 104 5.1 71  
## 714 -21.44 170.45 166 5.1 22  
## 759 -12.34 167.43 50 5.1 47  
## 764 -21.57 183.86 156 5.1 70  
## 771 -20.24 185.10 86 5.1 61  
## 785 -15.00 184.62 40 5.1 54  
## 839 -20.89 185.26 54 5.1 44  
## 850 -21.55 181.39 513 5.1 81  
## 910 -28.05 182.39 117 5.1 43  
## 916 -21.52 169.75 61 5.1 40  
## 925 -27.64 182.22 162 5.1 67  
## 28 -16.46 180.79 498 5.2 79  
## 74 -23.74 179.99 506 5.2 75  
## 81 -34.02 180.21 75 5.2 65  
## 93 -20.64 182.02 497 5.2 64  
## 98 -18.16 183.41 306 5.2 54  
## 200 -17.72 180.30 595 5.2 74  
## 207 -21.96 180.54 603 5.2 66  
## 280 -19.13 182.51 579 5.2 56  
## 322 -21.79 183.48 210 5.2 69  
## 463 -18.08 180.70 628 5.2 72  
## 486 -23.58 183.40 94 5.2 79  
## 568 -17.71 181.18 574 5.2 67  
## 571 -14.46 167.26 195 5.2 87  
## 579 -18.51 182.64 405 5.2 74  
## 601 -27.98 181.96 53 5.2 89  
## 666 -18.21 180.87 631 5.2 69  
## 692 -18.80 182.41 385 5.2 67  
## 702 -17.64 177.01 545 5.2 91  
## 703 -17.98 181.51 586 5.2 68  
## 742 -19.02 186.83 45 5.2 65  
## 746 -31.03 181.59 57 5.2 49  
## 812 -19.34 186.59 56 5.2 49  
## 844 -21.60 169.90 43 5.2 56  
## 853 -15.18 167.23 71 5.2 59  
## 885 -26.72 182.69 162 5.2 64  
## 908 -21.53 170.52 129 5.2 30  
## 938 -22.41 183.99 128 5.2 72  
## 972 -23.75 184.50 54 5.2 74  
## 987 -22.33 171.66 125 5.2 51  
## 80 -28.98 181.11 304 5.3 60  
## 117 -13.66 172.23 46 5.3 67  
## 149 -23.58 180.17 462 5.3 63  
## 168 -19.89 183.84 244 5.3 73  
## 191 -20.02 184.09 234 5.3 71  
## 243 -14.70 166.00 48 5.3 16  
## 249 -23.36 180.01 553 5.3 61  
## 318 -18.77 169.24 218 5.3 53  
## 330 -11.41 166.24 83 5.3 55  
## 331 -19.10 183.87 61 5.3 42  
## 397 -17.72 181.42 565 5.3 89  
## 400 -13.45 170.30 641 5.3 93  
## 564 -21.92 182.80 273 5.3 78  
## 623 -24.18 179.02 550 5.3 86  
## 675 -15.34 167.10 128 5.3 18  
## 681 -18.92 169.37 248 5.3 60  
## 752 -21.29 185.77 57 5.3 69  
## 758 -21.13 185.60 85 5.3 86  
## 765 -13.70 166.75 46 5.3 71  
## 787 -14.12 166.64 63 5.3 69  
## 921 -15.99 167.95 190 5.3 81  
## 3 -26.00 184.10 42 5.4 43  
## 25 -19.66 180.28 431 5.4 57  
## 214 -20.47 185.68 93 5.4 85  
## 313 -18.60 181.91 442 5.4 82  
## 338 -27.19 182.18 69 5.4 68  
## 363 -21.98 179.60 583 5.4 67  
## 372 -19.89 184.08 219 5.4 105  
## 404 -26.18 178.59 548 5.4 65  
## 459 -23.53 179.99 538 5.4 87  
## 477 -37.93 177.47 65 5.4 65  
## 539 -15.95 167.34 47 5.4 87  
## 547 -11.54 166.18 89 5.4 80  
## 651 -18.12 181.88 649 5.4 88  
## 757 -17.10 185.90 127 5.4 75  
## 890 -38.28 177.10 100 5.4 71  
## 928 -29.33 182.72 57 5.4 61  
## 936 -19.33 186.16 44 5.4 110  
## 944 -23.60 183.99 118 5.4 88  
## 965 -22.04 183.95 109 5.4 61  
## 970 -23.95 184.64 43 5.4 45  
## 70 -15.46 187.81 40 5.5 91  
## 354 -30.17 182.02 56 5.5 68  
## 358 -17.10 182.68 403 5.5 82  
## 380 -15.36 186.71 130 5.5 95  
## 449 -21.11 181.50 538 5.5 104  
## 496 -22.54 172.91 54 5.5 71  
## 512 -20.90 184.28 58 5.5 92  
## 525 -32.45 181.15 41 5.5 81  
## 531 -15.77 167.01 64 5.5 73  
## 541 -15.90 167.42 40 5.5 86  
## 663 -18.14 180.87 624 5.5 105  
## 893 -13.80 166.53 42 5.5 70  
## 948 -27.89 182.92 87 5.5 67  
## 952 -35.94 178.52 138 5.5 78  
## 167 -26.00 182.12 205 5.6 98  
## 297 -24.57 178.40 562 5.6 80  
## 570 -34.68 179.82 75 5.6 79  
## 636 -18.82 182.21 417 5.6 129  
## 649 -37.03 177.52 153 5.6 87  
## 653 -11.40 166.07 93 5.6 94  
## 712 -15.93 167.91 183 5.6 109  
## 920 -17.85 181.44 589 5.6 115  
## 935 -20.25 184.75 107 5.6 121  
## 109 -22.55 185.90 42 5.7 76  
## 151 -23.34 184.50 56 5.7 106  
## 176 -32.22 180.20 216 5.7 90  
## 275 -22.13 180.38 577 5.7 104  
## 376 -15.33 186.75 48 5.7 123  
## 399 -17.84 181.30 535 5.7 112  
## 605 -19.89 174.46 546 5.7 99  
## 869 -21.14 174.21 40 5.7 78  
## 558 -22.91 183.95 64 5.9 118  
## 753 -21.08 180.85 627 5.9 119  
## 17 -13.64 165.96 50 6.0 83  
## 870 -12.23 167.02 242 6.0 132  
## 1000 -21.59 170.56 165 6.0 119  
## 15 -20.70 169.92 139 6.1 94  
## 152 -15.56 167.62 127 6.4 122

1. What are the latitude and longitude of the quake reported by the largest number of stations?

latlon<-myQuakes[which.max(myQuakes$stations),]  
latlon[,1:2]

## lat long  
## 870 -12.23 167.02

1. What are the latitude and longitude of the quake reported by the smallest number of stations?

latlon2 <- myQuakes[which.min(myQuakes$stations),]  
latlon2[,1:2]

## lat long  
## 14 -21 181.66

**Step 3:** Using conditional if statements

1. Test if **maxQuake** is greater than 7 (output “yes” or “no”) **Hint:** Try modifying the following code in R:

if (maxQuake>7)   
 print("Yes" ) else   
 print("No")

## [1] "No"

1. Following the same logic, test if **minQuake** is less than 3 (output “yes” or “no”):

if (minQuake < 3)  
 print("Yes") else  
 print("No")

## [1] "No"