Fix each of the following common data frame subsetting errors:

mtcars[mtcars$cyl < 6] Error –> undefined columns selected Solution –> Add a comma after defining the objective.

Answer–> mtcars[mtcars$cyl< 6,]

mtcars[-1:3,] Error–> only 0's may be mixed with negative subscripts Solution –> make numbers; both negative, both positive, first one zero with second one positive, or first one negative with second one zero Depending on the intention of what you want to do.

Answer –> I dont know the intention of this question, so I will add two possible answers. (if we say) x = c(1, 2, 3, 4, 5) if you want to exclude both the 1st and 3rd elements Answer –> x[-c(3, 1)] OR x[c(-1, -3)]

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if you want to include the 3rd element only
Answer --> x[c(3)]
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mtcars[mtcars$cyl = 8,] Error–> unexpected '=' in "mtcars[mtcars$cyl =" Solution –> add == instead of =

Answer –> mtcars[mtcars$cyl == 8,]

mtcars[mtcars$cyl == 4 | 6,] It gave a wrong answer Solution –> Use the right Syntax

Answer –> mtcars[mtcars$cyl == 4|mtcars$cyl == 6,]

Why does the following code generated five missing values?

x = 1:5 x[NA]

Answer –> Because you need to add c function that is used to get the output by giving parameters inside the function. Solution to get output –> x[c(1: 5)]

Why does mtcars[1:15] return an error? How does it differ from mtcars[1:15,]?

Because in mtcars[1:15] R does not understand the column you want to use while subsetting the data frame as the syntax is not complete. Adding the comma will fix that error.

Explain how does the following code work.

x = matrix(c(1:3, NA, 5:7, NA, NA), nrow = 3) x[is.na(x)] = 0

Answer –> x = matrix(c(1:3, NA, 5:7, NA, NA), nrow = 3) means creat a materix with 3 rows and put the following elements in column_1 –> 1,2,3 column_2–> NA,5,6 column_3–> 7,NA,NA

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 [,1] [,2] [,3]
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[1,] 1 NA 7 [2,] 2 5 NA [3,] 3 6 NA

x[is.na(x)] = 0 means substitute each NA value with 0

[,1] [,2] [,3] [1,] 1 0 7 [2,] 2 5 0 [3,] 3 6 0

Load the Car Road Tests dataset (in R, run data("mtcars"), ?mtcars), then add a new column named as mpg_2 for the mtcars data frame. You can use if … else … or ifelse or any other functions that can get the job done. This new column will categorize mpg into four categories using the thresholds below:

Answer:

mtcars <- transform(mtcars, mpg_2 = ifelse(mtcars$mpg < 16, "Low", ifelse(mtcars$mpg >= 16 & mtcars$mpg < 21 , "Low_intermediate", ifelse(mtcars$mpg >= 21 & mtcars$mpg < 26, "Intermediate_high", "High"))))

mtcars

```
                  mpg cyl  disp  hp drat    wt  qsec vs am gear carb
mpg_2
```

Mazda RX4 21.0 6 160.0 110 3.90 2.620 16.46 0 1 4 4 Intermediate_high Mazda RX4 Wag 21.0 6 160.0 110 3.90 2.875 17.02 0 1 4 4 Intermediate_high Datsun 710 22.8 4 108.0 93 3.85 2.320 18.61 1 1 4 1 Intermediate_high Hornet 4 Drive 21.4 6 258.0 110 3.08 3.215 19.44 1 0 3 1 Intermediate_high Hornet Sportabout 18.7 8 360.0 175 3.15 3.440 17.02 0 0 3 2 Low_intermediate Valiant 18.1 6 225.0 105 2.76 3.460 20.22 1 0 3 1 Low_intermediate Duster 360 14.3 8 360.0 245 3.21 3.570 15.84 0 0 3 4 Low Merc 240D 24.4 4 146.7 62 3.69 3.190 20.00 1 0 4 2 Intermediate_high Merc 230 22.8 4 140.8 95 3.92 3.150 22.90 1 0 4 2 Intermediate_high Merc 280 19.2 6 167.6 123 3.92 3.440 18.30 1 0 4 4 Low_intermediate Merc 280C 17.8 6 167.6 123 3.92 3.440 18.90 1 0 4 4 Low_intermediate Merc 450SE 16.4 8 275.8 180 3.07 4.070 17.40 0 0 3 3 Low_intermediate Merc 450SL 17.3 8 275.8 180 3.07 3.730 17.60 0 0 3 3 Low_intermediate Merc 450SLC 15.2 8 275.8 180 3.07 3.780 18.00 0 0 3 3 Low Cadillac Fleetwood 10.4 8 472.0 205 2.93 5.250 17.98 0 0 3 4 Low Lincoln Continental 10.4 8 460.0 215 3.00 5.424 17.82 0 0 3 4 Low Chrysler Imperial 14.7 8 440.0 230 3.23 5.345 17.42 0 0 3 4 Low Fiat 128 32.4 4 78.7 66 4.08 2.200 19.47 1 1 4 1 High Honda Civic 30.4 4 75.7 52 4.93 1.615 18.52 1 1 4 2 High Toyota Corolla 33.9 4 71.1 65 4.22 1.835 19.90 1 1 4 1 High Toyota Corona 21.5 4 120.1 97 3.70 2.465 20.01 1 0 3 1 Intermediate_high Dodge Challenger 15.5 8 318.0 150 2.76 3.520 16.87 0 0 3 2 Low AMC Javelin 15.2 8 304.0 150 3.15 3.435 17.30 0 0 3 2 Low Camaro Z28 13.3 8 350.0 245 3.73 3.840 15.41 0 0 3 4 Low Pontiac Firebird 19.2 8 400.0 175 3.08 3.845 17.05 0 0 3 2 Low_intermediate Fiat X1-9 27.3 4 79.0 66 4.08 1.935 18.90 1 1 4 1 High Porsche 914-2

26.0 4 120.3 91 4.43 2.140 16.70 0 1 5 2 High Lotus Europa 30.4 4 95.1 113 3.77 1.513 16.90 1 1 5 2 High Ford Pantera L 15.8 8 351.0 264 4.22 3.170 14.50 0 1 5 4 Low Ferrari Dino 19.7 6 145.0 175 3.62 2.770 15.50 0 1 5 6 Low_intermediate Maserati Bora 15.0 8 301.0 335 3.54 3.570 14.60 0 1 5 8 Low Volvo 142E 21.4 4 121.0 109 4.11 2.780 18.60 1 1 4 2 Intermediate_high