11 Merc 280C 17.8 6 167.6 123 3.92 3.440 18.90 1 0 ## 12 Merc 450SE 16.4 8 275.8 180 3.07 4.070 17.40 0 ## 13 Merc 450SL 17.3 8 275.8 180 3.07 3.730 17.60 0 0 Merc 450SLC 15.2 8 275.8 180 3.07 3.780 18.00 0 0 Cadillac Fleetwood 10.4 8 472.0 205 2.93 5.250 17.98 0 0 ## 16 Lincoln Continental 10.4 8 460.0 215 3.00 5.424 17.82 0 0 Chrysler Imperial 14.7 8 440.0 230 3.23 5.345 17.42 0 0 ## 18 Fiat 128 32.4 4 78.7 66 4.08 2.200 19.47 1 1 ## 19 Honda Civic 30.4 4 75.7 52 4.93 1.615 18.52 1 1 ## 20 Toyota Corolla 33.9 4 71.1 65 4.22 1.835 19.90 1 1 Toyota Corona 21.5 4 120.1 97 3.70 2.465 20.01 1 0 ## 21 ## 22 Dodge Challenger 15.5 8 318.0 150 2.76 3.520 16.87 0 0 ## 23 AMC Javelin 15.2 8 304.0 150 3.15 3.435 17.30 0 0 Camaro Z28 13.3 8 350.0 245 3.73 3.840 15.41 0 0 ## 24 ## 25 Pontiac Firebird 19.2 8 400.0 175 3.08 3.845 17.05 0 0 Fiat X1-9 27.3 4 79.0 66 4.08 1.935 18.90 1 1 ## 26 ## 27 Porsche 914-2 26.0 4 120.3 91 4.43 2.140 16.70 0 1 ## 28 Lotus Europa 30.4 4 95.1 113 3.77 1.513 16.90 1 1 ## 29 Ford Pantera L 15.8 8 351.0 264 4.22 3.170 14.50 0 1 ## 30 Ferrari Dino 19.7 6 145.0 175 3.62 2.770 15.50 0 1 Maserati Bora 15.0 8 301.0 335 3.54 3.570 14.60 0 1 ## 31 ## 32 Volvo 142E 21.4 4 121.0 109 4.11 2.780 18.60 1 1 select(mtcars, 1, 2 , 5) model_car mpg hp Mazda RX4 21.0 110 Mazda RX4 Wag 21.0 110 ## 3 Datsun 710 22.8 93 ## 4 Hornet 4 Drive 21.4 110 ## 5 Hornet Sportabout 18.7 175 ## 6 Valiant 18.1 105 ## 7 Duster 360 14.3 245 ## 8 Merc 240D 24.4 62 ## 9 Merc 230 22.8 95 Merc 280 19.2 123 ## 10 ## 11 Merc 280C 17.8 123 ## 12 Merc 450SE 16.4 180 ## 13 Merc 450SL 17.3 180 ## 14 Merc 450SLC 15.2 180 ## 15 Cadillac Fleetwood 10.4 205 ## 16 Lincoln Continental 10.4 215 Chrysler Imperial 14.7 230 Fiat 128 32.4 66 Honda Civic 30.4 52 ## 19 ## 20 Toyota Corolla 33.9 65 ## 21 Toyota Corona 21.5 97 ## 22 Dodge Challenger 15.5 150 ## 23 AMC Javelin 15.2 150 ## 24 Camaro Z28 13.3 245 ## 25 Pontiac Firebird 19.2 175 ## 26 Fiat X1-9 27.3 66 ## 27 Porsche 914-2 26.0 91 ## 28 Lotus Europa 30.4 113 ## 29 Ford Pantera L 15.8 264 ## 30 Ferrari Dino 19.7 175 ## 31 Maserati Bora 15.0 335 ## 32 Volvo 142E 21.4 109 select(mtcars, mpg, hp) mpg hp ## 1 21.0 110 ## 2 21.0 110 ## 3 22.8 93 ## 4 21.4 110 ## 5 18.7 175 ## 6 18.1 105 ## 7 14.3 245 ## 8 24.4 62 ## 9 22.8 95 ## 10 19.2 123 ## 11 17.8 123 ## 12 16.4 180 ## 13 17.3 180 ## 14 15.2 180 ## 15 10.4 205 ## 16 10.4 215 ## 17 14.7 230 ## 18 32.4 66 ## 19 30.4 52 ## 20 33.9 65 ## 21 21.5 97 ## 22 15.5 150 ## 23 15.2 150 ## 24 13.3 245 ## 25 19.2 175 ## 26 27.3 66 ## 27 26.0 91 ## 28 30.4 113 ## 29 15.8 264 ## 30 19.7 175 ## 31 15.0 335 ## 32 21.4 109 select(mtcars, starts_with("a")) #select col name ^A am## 1 1 ## 2 1 ## 3 1 ## 4 ## 5 0 ## 6 ## 7 0 ## 8 0 ## 9 ## 10 0 ## 11 0 ## 12 0 ## 13 0 ## 14 0 ## 15 0 ## 16 0 ## 17 0 ## 18 1 ## 19 1 ## 20 1 ## 21 0 ## 22 0 ## 23 0 ## 24 0 ## 25 0 ## 26 1 ## 27 1 ## 28 1 ## 29 1 ## 30 1 ## 31 1 ## 32 1 select(mtcars, ends_with(("p"))) disp hp ## 1 160.0 110 ## 2 160.0 110 ## 3 108.0 93 ## 4 258.0 110 ## 5 360.0 175 ## 6 225.0 105 ## 7 360.0 245 ## 8 146.7 62 ## 9 140.8 95 ## 10 167.6 123 ## 11 167.6 123 ## 12 275.8 180 ## 13 275.8 180 ## 14 275.8 180 ## 15 472.0 205 ## 16 460.0 215 ## 17 440.0 230 ## 18 78.7 66 ## 19 75.7 52 ## 20 71.1 65 ## 21 120.1 97 ## 22 318.0 150 ## 23 304.0 150 ## 24 350.0 245 ## 25 400.0 175 ## 26 79.0 66 ## 27 120.3 91 ## 28 95.1 113 ## 29 351.0 264 ## 30 145.0 175 ## 31 301.0 335 ## 32 121.0 109 select(mtcars, contains("d")) model_car disp drat ## 1 Mazda RX4 160.0 3.90 ## 2 Mazda RX4 Wag 160.0 3.90 ## 3 Datsun 710 108.0 3.85 Hornet 4 Drive 258.0 3.08 ## 4 ## 5 Hornet Sportabout 360.0 3.15 ## 6 Valiant 225.0 2.76 Duster 360 360.0 3.21 ## 7 Merc 240D 146.7 3.69 ## 8 ## 9 Merc 230 140.8 3.92 ## 10 Merc 280 167.6 3.92 Merc 280C 167.6 3.92 ## 11 ## 12 Merc 450SE 275.8 3.07 ## 13 Merc 450SL 275.8 3.07 ## 14 Merc 450SLC 275.8 3.07 ## 15 Cadillac Fleetwood 472.0 2.93 ## 16 Lincoln Continental 460.0 3.00 ## 17 Chrysler Imperial 440.0 3.23 Fiat 128 78.7 4.08 ## 18 ## 19 Honda Civic 75.7 4.93 ## 20 Toyota Corolla 71.1 4.22 ## 21 Toyota Corona 120.1 3.70 ## 22 Dodge Challenger 318.0 2.76 ## 23 AMC Javelin 304.0 3.15 ## 24 Camaro Z28 350.0 3.73 ## 25 Pontiac Firebird 400.0 3.08 ## 26 Fiat X1-9 79.0 4.08 ## 27 Porsche 914-2 120.3 4.43 ## 28 Lotus Europa 95.1 3.77 ## 29 Ford Pantera L 351.0 4.22 ## 30 Ferrari Dino 145.0 3.62 ## 31 Maserati Bora 301.0 3.54 ## 32 Volvo 142E 121.0 4.11 use pipe mtcars %>% select(mpg, hp, wt) %>% head(5)mpg hp wt ## 1 21.0 110 2.620 ## 2 21.0 110 2.875 ## 3 22.8 93 2.320 ## 4 21.4 110 3.215 ## 5 18.7 175 3.440 Apply Filter filter(mtcars, hp > $300 \mid hp < 150) \# \mid = or$ model_car mpg cyl disp hp drat wt qsec vs am gear carb ## 1 Mazda RX4 21.0 6 160.0 110 3.90 2.620 16.46 0 1 4 ## 2 Mazda RX4 Wag 21.0 6 160.0 110 3.90 2.875 17.02 0 1 ## 3 ## 4 Hornet 4 Drive 21.4 6 258.0 110 3.08 3.215 19.44 1 0 3 1 ## 5 Valiant 18.1 6 225.0 105 2.76 3.460 20.22 1 0 3 1 Merc 240D 24.4 4 146.7 62 3.69 3.190 20.00 1 0 4 2 ## 6 Merc 230 22.8 4 140.8 95 3.92 3.150 22.90 1 0 4 2 ## 7 ## 8 Merc 280 19.2 6 167.6 123 3.92 3.440 18.30 1 0 4 4 Merc 280C 17.8 6 167.6 123 3.92 3.440 18.90 1 0 4 4 ## 9 ## 10 Honda Civic 30.4 4 75.7 52 4.93 1.615 18.52 1 1 4 2 ## 11 ## 12 Toyota Corolla 33.9 4 71.1 65 4.22 1.835 19.90 1 1 4 1 ## 13 Toyota Corona 21.5 4 120.1 97 3.70 2.465 20.01 1 0 3 ## 14 Fiat X1-9 27.3 4 79.0 66 4.08 1.935 18.90 1 1 4 1 ## 15 Porsche 914-2 26.0 4 120.3 91 4.43 2.140 16.70 0 1 5 2 ## 16 Lotus Europa 30.4 4 95.1 113 3.77 1.513 16.90 1 1 5 ## 17 Maserati Bora 15.0 8 301.0 335 3.54 3.570 14.60 0 1 5 8 ## 18 Volvo 142E 21.4 4 121.0 109 4.11 2.780 18.60 1 1 4 filter(mtcars, hp > 300 & mpg < 25) # & = and model_car mpg cyl disp hp drat wt qsec vs am gear carb ## 1 Maserati Bora 15 8 301 335 3.54 3.57 14.6 0 1 5 8 use pipe mtcars %>% select(mpg, hp, wt) %>% filter(between(hp, 150, 200)) ## mpg hp wt ## 1 18.7 175 3.440 ## 2 16.4 180 4.070 ## 3 17.3 180 3.730 ## 4 15.2 180 3.780 ## 5 15.5 150 3.520 ## 6 15.2 150 3.435 ## 7 19.2 175 3.845 ## 8 19.7 175 2.770 mtcars %>% select(mpg, hp, wt, am) %>% filter(am == 0)mpg hp ## 1 21.4 110 3.215 0 ## 2 18.7 175 3.440 0 ## 3 18.1 105 3.460 0 ## 4 **14.3 245 3.570 0** ## 5 24.4 62 3.190 0 ## 6 22.8 95 3.150 0 ## 7 19.2 123 3.440 0 ## 8 17.8 123 3.440 0 ## 9 16.4 180 4.070 0 ## 10 17.3 180 3.730 0 ## **11 15.2 180 3.780 0** ## 12 10.4 205 5.250 0 ## 13 10.4 215 5.424 0 ## 14 14.7 230 5.345 0 ## 15 21.5 97 2.465 0 ## 16 15.5 150 3.520 0 ## 17 15.2 150 3.435 0 ## 18 13.3 245 3.840 0 ## 19 19.2 175 3.845 0 mtcars %>% select(mpg, hp, wt, am) %>% filter(hp > 250)## mpg hp wt am ## 1 15.8 264 3.17 1 ## 2 15.0 335 3.57 1 Regular expression use function grep() & grepl() grep("^A", state.name, value = T) # return value ## [1] "Alabama" "Alaska" "Arizona" "Arkansas" $grep("^A", state.name, value = F) # default value = F return position$ ## [1] 1 2 3 4 grepl("^A", state.name) # return True, False ใส่ใน filter() จะ return value ## [1] TRUE TRUE TRUE TRUE FALSE FALSE FALSE FALSE FALSE FALSE FALSE ## [13] FALSE ## [25] FALSE ## [37] FALSE ## [49] FALSE FALSE grepl("^M", mtcars\$model_car) ## [1] TRUE TRUE FALSE FALSE FALSE FALSE TRUE TRUE TRUE TRUE TRUE ## [13] TRUE TRUE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE ## [25] FALSE FALSE FALSE FALSE FALSE TRUE FALSE use pipe grepl ใช้กับ filter() จะ return value mtcars %>% select(model_car, am, hp) %>% filter(grepl("^M", model_car)) # grepl ใช้กับ filter() จะ return value model_car am hp ## 1 Mazda RX4 1 110 Mazda RX4 Wag 1 110 ## 3 Merc 240D 0 62 Merc 230 0 95 ## 5 Merc 280 0 123 ## 6 Merc 280C 0 123 Merc 450SE 0 180 ## 8 Merc 450SL 0 180 ## 9 Merc 450SLC 0 180 ## 10 Maserati Bora 1 335 mtcars %>% select(model_car, hp) %>% filter(between(hp, 200, 250)) %>% filter(grepl("D", model_car)) model_car hp ## 1 Duster 360 245 Apply Arrange (sort data) arrange(mtcars, desc(hp)) model_car mpg cyl disp hp drat wt qsec vs am gear carb Maserati Bora 15.0 8 301.0 335 3.54 3.570 14.60 0 1 ## 1 ## 2 Ford Pantera L 15.8 8 351.0 264 4.22 3.170 14.50 0 ## 3 Duster 360 14.3 8 360.0 245 3.21 3.570 15.84 0 0 ## 4 Camaro Z28 13.3 8 350.0 245 3.73 3.840 15.41 0 0 ## 5 Chrysler Imperial 14.7 8 440.0 230 3.23 5.345 17.42 0 0 Lincoln Continental 10.4 8 460.0 215 3.00 5.424 17.82 0 0 3 Cadillac Fleetwood 10.4 8 472.0 205 2.93 5.250 17.98 0 0 ## 8 Merc 450SE 16.4 8 275.8 180 3.07 4.070 17.40 0 0 ## 9 Merc 450SL 17.3 8 275.8 180 3.07 3.730 17.60 0 0 Merc 450SLC 15.2 8 275.8 180 3.07 3.780 18.00 0 0 ## 10 ## 11 Hornet Sportabout 18.7 8 360.0 175 3.15 3.440 17.02 0 0 ## 12 Pontiac Firebird 19.2 8 400.0 175 3.08 3.845 17.05 0 0 3 ## 13 Ferrari Dino 19.7 6 145.0 175 3.62 2.770 15.50 0 1 ## 14 Dodge Challenger 15.5 8 318.0 150 2.76 3.520 16.87 0 0 AMC Javelin 15.2 8 304.0 150 3.15 3.435 17.30 0 0 ## 15 ## 16 Merc 280 19.2 6 167.6 123 3.92 3.440 18.30 1 0 Merc 280C 17.8 6 167.6 123 3.92 3.440 18.90 1 0 ## 17 Lotus Europa 30.4 4 95.1 113 3.77 1.513 16.90 1 1 ## 18 ## 19 Mazda RX4 21.0 6 160.0 110 3.90 2.620 16.46 0 1 ## 20 Mazda RX4 Wag 21.0 6 160.0 110 3.90 2.875 17.02 0 1 Hornet 4 Drive 21.4 6 258.0 110 3.08 3.215 19.44 1 0 ## 21 1 ## 22 Volvo 142E 21.4 4 121.0 109 4.11 2.780 18.60 1 1 Valiant 18.1 6 225.0 105 2.76 3.460 20.22 1 0 ## 23 1 ## 24 Toyota Corona 21.5 4 120.1 97 3.70 2.465 20.01 1 0 ## 25 Merc 230 22.8 4 140.8 95 3.92 3.150 22.90 1 0 ## 26 Datsun 710 22.8 4 108.0 93 3.85 2.320 18.61 1 1 Porsche 914-2 26.0 4 120.3 91 4.43 2.140 16.70 0 1 ## 27 ## 28 Fiat 128 32.4 4 78.7 66 4.08 2.200 19.47 1 1 ## 29 Fiat X1-9 27.3 4 79.0 66 4.08 1.935 18.90 1 1 ## 30 Toyota Corolla 33.9 4 71.1 65 4.22 1.835 19.90 1 1 ## 31 Merc 240D 24.4 4 146.7 62 3.69 3.190 20.00 1 0 2 ## 32 Honda Civic 30.4 4 75.7 52 4.93 1.615 18.52 1 1 use pipe mtcars %>% select(mpg, hp, wt, am) %>% filter(between(hp, 150, 200)) %>% arrange(desc(am), desc(hp)) # sort am ก่อน และ sort hp mpg hp wt am ## 1 19.7 175 2.770 1 ## 2 16.4 180 4.070 0 ## 3 17.3 180 3.730 0 ## 4 **15.2 180 3.780 0** ## 5 18.7 175 3.440 0 ## 6 19.2 175 3.845 0 ## 7 15.5 150 3.520 0 ## 8 15.2 150 3.435 0 Apply Mutate (create new columns) mtcars %>% filter(mpg >= 20) %>% select(model_car, mpg, hp, wt, am) %>% mutate(model_car_upper = toupper(model_car), # toupper = change to Upper case $mpg_x2 = mpg^2$, $mpg_x2_plus = mpg_x2 + 10$, $new_col = "Arm",$ mpg_double_plus_if = if_else(mpg_x2_plus > 75, "test1", "test2"), am_label = if_else(am ==0, "auto", "manual"), am = if_else(am ==0, "auto", "manual")) # เขียนทับ column เดิม model_car mpg hp wt am model_car_upper mpg_x2 mpg_x2_plus ## 1 Mazda RX4 21.0 110 2.620 manual MAZDA RX4 42.0 52.0 52.0 Mazda RX4 Wag 21.0 110 2.875 manual MAZDA RX4 WAG 42.0 Datsun 710 22.8 93 2.320 manual DATSUN 710 45.6 55.6 Hornet 4 Drive 21.4 110 3.215 auto HORNET 4 DRIVE 42.8 52.8 ## 5 Merc 240D 24.4 62 3.190 auto MERC 240D 48.8 58.8 MERC 230 ## 6 Merc 230 22.8 95 3.150 auto 55.6 ## 7 FIAT 128 74.8 Fiat 128 32.4 66 2.200 manual 64.8 Honda Civic 30.4 52 1.615 manual HONDA CIVIC 60.8 70.8 Toyota Corolla 33.9 65 1.835 manual TOYOTA COROLLA 77.8 67.8 Toyota Corona 21.5 97 2.465 auto TOYOTA CORONA 43.0 53.0 ## 10 Fiat X1-9 27.3 66 1.935 manual FIAT X1-9 54.6 64.6 ## 12 Porsche 914-2 26.0 91 2.140 manual PORSCHE 914-2 52.0 62.0 LOTUS EUROPA Lotus Europa 30.4 113 1.513 manual 70.8 ## 13 60.8 ## 14 Volvo 142E 21.4 109 2.780 manual VOLVO 142E 42.8 52.8 ## new_col mpg_double_plus_if am_label ## 1 test2 manual ## 2 test2 manual ## 3 Arm manual test2 ## 4 Arm test2 auto ## 5 test2 Arm auto ## 6 Arm test2 auto ## 7 Arm test2 manual ## 8 test2 manual Arm ## 9 test1 manual Arm ## 10 Arm test2 ## 11 test2 manual ## 12 Arm test2 manual test2 manual test2 manual ## 13 Arm ## 14 Arm Apply Summarize (Like aggregate function in SQL) mtcars %>% summarise(avg_mpg = mean(mpg), $sum_mpg = sum(mpg),$ $min_hp = min(hp),$ $max_hp = max(hp),$ $var_hp = var(hp),$ $sd_hp = sd(hp),$ $med_hp = median(hp),$ n = n()) # ใช้ได้เฉพาะ summarize avg_mpg sum_mpg min_hp max_hp var_hp sd_hp med_hp n ## 1 20.09062 642.9 52 335 4700.867 68.56287 123 32 Apply Group by (ใส่ก่อน summary) group by col am mtcars %>% mutate(am = if_else(am == 0 , "Auto", "Manual")) %>% group_by(am) %>% # group by col am summarise(avg_mpg = mean(mpg), $sum_mpg = sum(mpg),$ $min_hp = min(hp),$ $max_hp = max(hp),$ $var_hp = var(hp),$ $sd_hp = sd(hp),$ $med_hp = median(hp),$ n = n()) # ใช้ได้เฉพาะ summarize ## # A tibble: 2 × 9 avg_mpg sum_mpg min_hp max_hp var_hp sd_hp med_hp <chr> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <int> ## 1 Auto 17.1 326. 62 245 2906. 53.9 175 19 ## 2 Manual 24.4 317. 52 335 7066. 84.1 109 13 Join data join band_members with band_instruments #left join (key = name)left_join(band_members, band_instruments, by = "name") ## # A tibble: 3 × 3 ## name band plays ## <chr> <chr> <chr> ## 1 Mick Stones <NA> ## 2 John Beatles guitar ## 3 Paul Beatles bass # inner join inner_join(band_members, band_instruments, by = "name") ## # A tibble: 2 × 3 ## name band plays ## <chr> <chr> ## 1 John Beatles guitar ## 2 Paul Beatles bass # full join full_join(band_members, band_instruments, by = "name") ## # A tibble: 4 × 3 ## name band plays ## <chr> <chr> ## 1 Mick Stones <NA> ## 2 John Beatles guitar ## 3 Paul Beatles bass ## 4 Keith <NA> guitar use pipe band_members %>% mutate(name_upper = toupper(name)) %>% left_join(band_instruments, by = "name") ## # A tibble: 3 × 4 ## name band name_upper plays <chr> <chr> <chr> ## 1 Mick Stones MICK <NA> ## 2 John Beatles JOHN guitar ## 3 Paul Beatles PAUL bass กรณีชื่อ key ไม่ตรงกัน key ของ table band_member = member_name key ของ table band_instruments = name band_members %>% select(member_name = name, band_name = band) %>% left_join(band_instruments, by = c("member_name" = "name")) #use this syntax ## # A tibble: 3 × 3 ## member_name band_name plays <chr> <chr> ## 1 Mick Stones <NA>
2 John Beatles guitar
3 Paul Beatles bass Random sampling random 2 row mtcars %>% sample_n(2) %>% select(model_car) # select จะดึง column model_car ## 1 Merc 230 ## 2 Merc 450SE select จะดึง column ถ้าเราอยากได้ค่าของมันต้องใช้ pull() mtcars %>% sample_n(2) %>% pull(model_car) ## [1] "Hornet 4 Drive" "Mazda RX4" sample_frac จะสุ่มเป็น % mtcars %>% sample_frac(0.5) %>% #สุมมา 50% ของ data pull(model_car) ## [1] "Fiat X1-9" "Merc 450SLC" "Porsche 914-2" ## [4] "Valiant" "Camaro Z28" "Merc 450SE" "Pontiac Firebird" "Honda Civic" ## [7] "Toyota Corona" ## [10] "Hornet 4 Drive" "Merc 450SL" "Lotus Europa" ## [13] "Fiat 128" "Lincoln Continental" "Duster 360" ## [16] "Datsun 710" count count col = am mtcars %>% mutate(am = if_else(am == 0, "auto", "manual")) %>% count(am) %>% mutate(percent = n / sum(n))

am n percent

sqldf("select mpg, hp from mtcars where hp >= 200")

sqldf("select avg(hp), max(hp), count(*) from mtcars")

avg(hp) max(hp) count(*)

335

1 auto 19 0.59375 ## 2 manual 13 0.40625

use SQL in R

load library sqldf

library(sqldf)

mpg hp
1 14.3 245
2 10.4 205
3 10.4 215
4 14.7 230
5 13.3 245
6 15.8 264
7 15.0 335

1 146.6875

write query

Data_Transformation_live

glue("Hi my name is {my_name}. I'm {my_age} years old.")

data transformation use dplyr มี 5 function หลักๆ

mpg cyl disp hp drat wt qsec vs am gear carb

6 160 110 3.90 2.620 16.46 0 1

6 160 110 3.90 2.875 17.02 0 1

Valiant 18.1 6 225 105 2.76 3.460 20.22 1 0

Mazda RX4 21.0 6 160.0 110 3.90 2.620 16.46 0

Mazda RX4 Wag 21.0 6 160.0 110 3.90 2.875 17.02 0 1 Datsun 710 22.8 4 108.0 93 3.85 2.320 18.61 1 1

Hornet 4 Drive 21.4 6 258.0 110 3.08 3.215 19.44 1 0

Valiant 18.1 6 225.0 105 2.76 3.460 20.22 1 0

Duster 360 14.3 8 360.0 245 3.21 3.570 15.84 0 0 Merc 240D 24.4 4 146.7 62 3.69 3.190 20.00 1 0

Merc 230 22.8 4 140.8 95 3.92 3.150 22.90 1 0

Merc 280 19.2 6 167.6 123 3.92 3.440 18.30 1 0

Hornet Sportabout 18.7 8 360.0 175 3.15 3.440 17.02 0 0

wt qsec vs am gear carb

wt qsec vs am gear

Hi my name is Arm. I'm 24 years old.

5. summarize & group by

Change row names to new column : model_car

Mazda RX4 21.0

use library dplyr to transformation

Mazda RX4 Wag 21.0

mtcars <- rownames_to_column(mtcars, "model_car")</pre>

model_car mpg cyl disp hp drat

5 Hornet Sportabout 18.7 8 360 175 3.15 3.440 17.02 0 0

model_car mpg cyl disp hp drat

function glue() ใช้ในการ print result กับตัวแปรเข้าด้วยกัน

Arm

2023-12-26

load library

library(tidyverse)
library(glue)
library(lubridate)

my_name <- 'Arm'
my_age <- 24</pre>

1. select

2. filter

3. arrange

4. mutate

Prep data

head(mtcars)

head(mtcars)

Apply Select

select(mtcars, 1:11)

1

2

3

2

3 ## 4

5

7

8

10

Raw data