

Sheth L.U.J. And Sir M.V. College

Performing two-way ANOVA using aov() (R).

Output:-

```
Console Terminal Background Jobs
R - R 4.5.2 - ~/
> cars_data <- read.csv("cars.csv")
> str(cars_data)
'data.frame':   38531 obs. of  30 variables:
 $ manufacturer_name: chr "Subaru" "Subaru" "Subaru" "Subaru" ...
 $ model_name       : chr "Outback" "Outback" "Forester" "Impreza" ...
 $ transmission     : chr "automatic" "automatic" "automatic" "mechanical" ...
 $ color            : chr "silver" "blue" "red" "blue" ...
 $ odometer_value   : int 190000 290000 402000 10000 280000 132449 318280 350000
 179000 571317 ...
 $ year_produced    : int 2010 2002 2001 1999 2001 2011 1998 2004 2010 1999 ...
 $ engine_fuel      : chr "gasoline" "gasoline" "gasoline" "gasoline" ...
 $ engine_has_gas   : chr "False" "False" "False" "False" ...
 $ engine_type      : chr "gasoline" "gasoline" "gasoline" "gasoline" ...
 $ engine_capacity  : num 2.5 3 2.5 3 2.5 2.5 2.5 2.5 2.5 ...
 $ body_type        : chr "universal" "universal" "suv" "sedan" ...
 $ has_warranty     : chr "False" "False" "False" "False" ...
 $ state           : chr "owned" "owned" "owned" "owned" ...
 $ drivetrain       : chr "all" "all" "all" "all" ...
 $ price_usd        : num 10900 5000 2800 9999 2134 ...
 $ is_exchangeable  : chr "False" "True" "True" "True" ...
 $ location_region  : chr "Минская обл." "Минская обл." "Минская обл." "Минская обл." ...
 $ number_of_photos: int 9 12 4 9 14 20 8 7 17 8 ...
 $ up_counter       : int 13 54 72 42 7 56 147 29 33 11 ...
 $ feature_0        : chr "False" "False" "False" "True" ...
 $ feature_1        : chr "True" "True" "True" "False" ...
 $ feature_2        : chr "True" "False" "False" "False" ...
 $ feature_3        : chr "True" "False" "False" "False" ...
 $ feature_4        : chr "False" "True" "False" "False" ...
 $ feature_5        : chr "True" "True" "False" "False" ...
 $ feature_6        : chr "False" "False" "False" "False" ...
 $ feature_7        : chr "True" "False" "False" "False" ...
 $ feature_8        : chr "True" "False" "True" "False" ...
 $ feature_9        : chr "True" "True" "True" "False" ...
 $ duration_listed  : int 16 83 151 86 7 67 307 73 87 43 ...
> cars_data$cyl <- as.factor(cars_data$cyl)
```

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins
Source Console Terminal Background Jobs
R - R 4.5.2 - ~/
> number_of_photos: int 9 12 4 9 14 20 8 7 17 8 ...
> up_counter       : int 13 54 72 42 7 56 147 29 33 11 ...
> feature_0        : chr "False" "False" "False" "True" ...
> feature_1        : chr "True" "True" "True" "False" ...
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> feature_5        : chr "True" "True" "False" "False" ...
> feature_6        : chr "False" "False" "False" "False" ...
> feature_7        : chr "True" "False" "False" "False" ...
> feature_8        : chr "True" "False" "True" "False" ...
> feature_9        : chr "True" "True" "True" "False" ...
> duration_listed  : int 16 83 151 86 7 67 307 73 87 43 ...
> cars_data$cyl <- as.factor(cars_data$cyl)
Error in '$<-data.frame'(*tmp*, cyl, value = integer(0)) :
replacement has 0 rows, data has 38531
> cars_data$gear <- as.factor(cars_data$gear)
Error in '$<-data.frame'(*tmp*, gear, value = integer(0)) :
replacement has 0 rows, data has 38531
> anova_model <- aov(mpg ~ cyl * gear, data = cars_data)
Error in eval(predvars, data, env) : object 'mpg' not found
> summary(anova_model)
          Df Sum Sq Mean Sq F value Pr(>F)
gender      1    179   178.92    4.669 0.0311 *
Residuals 581 22262    38.32
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
> |
```

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Subject:- Data Analysis With SAS / SPSS / R