

MVLU COLLEGE

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

The image displays two screenshots of the RStudio environment, showing the execution of an R script for a two-way ANOVA.

Top Screenshot: The script editor shows the following code:

```
1 print("Name: S126 Hariprasad")
2
3 # 1. Select the 'Most Runs - 2020.csv' file manually
4 data <- read.csv(file.choose())
5
6 # 2. Prepare the data
7 # Convert '100' and '50' columns into Factors (Categories) for ANOVA
8 # This allows us to see if having a 100 or a 50 significantly impacts total Runs
9 data$Has_100 <- as.factor(ifelse(data$X100 > 0, "Yes", "No"))
10 data$Has_50 <- as.factor(ifelse(data$X50 > 0, "Yes", "No"))
11
12 # 3. Perform Two-way ANOVA
13 # Aim: Test if total 'Runs' are affected by scoring a Century and/or a Half-Century
14 anova_result <- aov(Runs ~ Has_100 * Has_50, data = data)
15
16 # 4. View the ANOVA table results
17 summary(anova_result)
18
19 # 5. Preview the processed data
20 head(data[, c("Player", "Runs", "Has_100", "Has_50")])
21
```

The Environment pane on the right shows the 'anova_resu...' object, which is a list of 13 components, including coefficients, residuals, and effects.

Bottom Screenshot: The same script is executed, and the console output is visible:

```
> print("Name: S126 Hariprasad")
[1] "Name: S126 Hariprasad"
> # 1. Select the 'Most Runs - 2020.csv' file manually
> data <- read.csv(file.choose())
> # 2. Prepare the data
> # Convert '100' and '50' columns into Factors (Categories) for ANOVA
> # This allows us to see if having a 100 or a 50 significantly impacts total Runs
> data$Has_100 <- as.factor(ifelse(data$X100 > 0, "Yes", "No"))
> data$Has_50 <- as.factor(ifelse(data$X50 > 0, "Yes", "No"))
> # 3. Perform Two-way ANOVA
> # Aim: Test if total 'Runs' are affected by scoring a Century and/or a Half-Century
> anova_result <- aov(Runs ~ Has_100 * Has_50, data = data)
> # 4. View the ANOVA table results
> summary(anova_result)
          Df Sum Sq Mean Sq F value    Pr(>F)
Has_100    1  534748   534748   68.03 1.55e-13 ***
Has_50     1 2137597 2137597  271.92 < 2e-16 ***
Residuals 130 1021936    7861
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
> # 5. Preview the processed data
> head(data[, c("Player", "Runs", "Has_100", "Has_50")])
   Player Runs Has_100 Has_50
1  KL Rahul   670    Yes    Yes
2  Shikhar Dhawan 618    Yes    Yes
3  David Warner  548     No    Yes
4  Shreyas Iyer  519     No    Yes
5  Ishan Kishan  516     No    Yes
6 Quinton de Kock 503     No    Yes
```

The Environment pane on the right shows the 'anova_resu...' object, which is a list of 13 components, including coefficients, residuals, and effects.

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