

## Practical No. 09

**AIM** - Practical of Analysis of Variance (ANOVA).

### Source Code -

```
data("warppbreaks")
head(warppbreaks)
summary(warppbreaks)
model1 <- aov(breaks~wool+tension, data=warppbreaks)
summary(model1)
plot(model1)
model2 <- aov(breaks~wool+tension+wool:tension, data=warppbreaks)
summary(model2)
plot(model2)
```

### OUTPUT -

```
> data("warppbreaks")
> head(warppbreaks)
  breaks wool tension
1     26   A       L
2     30   A       L
3     54   A       L
4     25   A       L
5     70   A       L
6     52   A       L
> summary(warppbreaks)
      breaks      wool      tension
Min.   :10.00   A:27   L:18
1st Qu.:18.25   B:27   M:18
Median :26.00           H:18
Mean    :28.15
3rd Qu.:34.00
Max.    :70.00
> model1 <- aov(breaks~wool+tension, data=warppbreaks)
> summary(model1)
              Df Sum Sq Mean Sq F value Pr(>F)
wool           1    451   450.7    3.339 0.07361 .
tension        2   2034  1017.1    7.537 0.00138 **
Residuals     50   6748   135.0
---
```

```

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
> plot(model1)
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> model2 <- aov(breaks~wool+tension+wool:tension, data=warpbreaks)
> summary(model2)
      Df Sum Sq Mean Sq F value    Pr(>F)
wool    1   451   450.7    3.765 0.058213 .
tension  2  2034  1017.1    8.498 0.000693 ***
wool:tension  2  1003   501.4    4.189 0.021044 *
Residuals 48   5745   119.7
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
> plot(model2)
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> |

```





