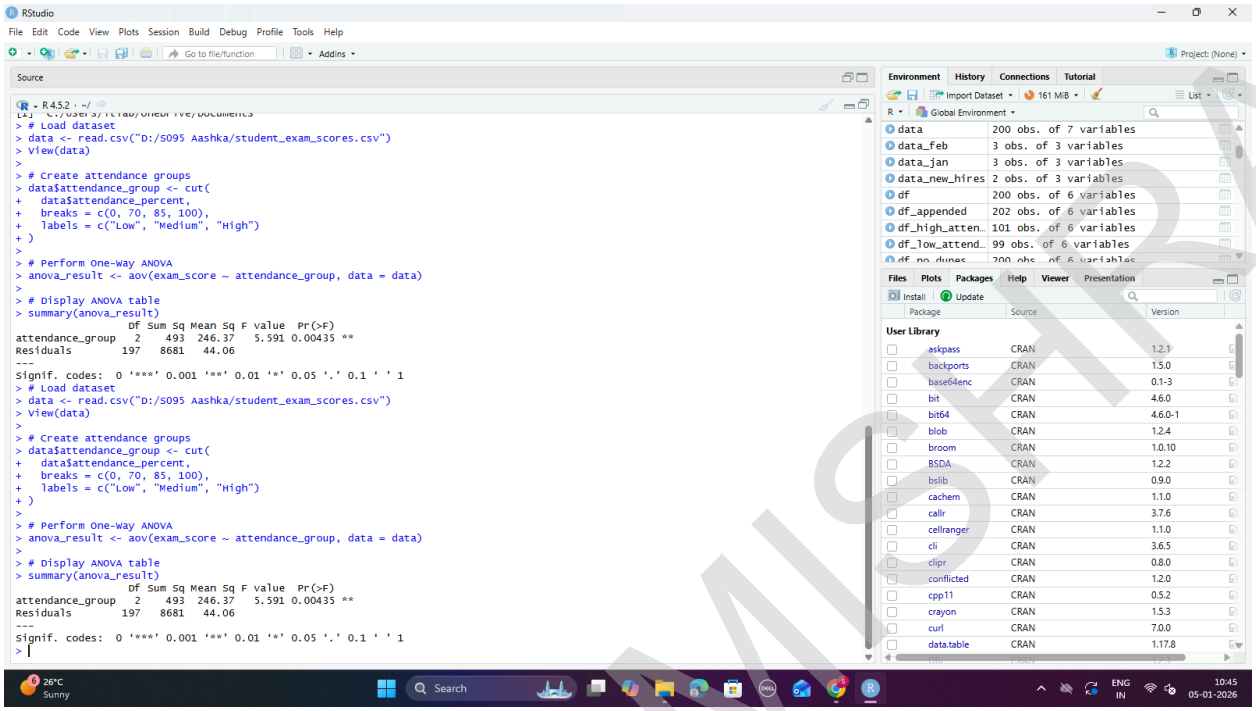
SHETH L.U.J. AND SIR M.V. COLLEGE
SUBJECT: DATA ANALYSIS WITH R
PRACTICAL NO. 7 TO 9 MOD 2

AIM:7. Performing one-way ANOVA using aov() (R)



```
> # Load dataset
> data <- read.csv("D:/S095 Aashka/student_exam_scores.csv")
> View(data)
>
> # Create attendance groups
> data$attendance_group <- cut(
+   data$attendance_percent,
+   breaks = c(0, 70, 85, 100),
+   labels = c("Low", "Medium", "High")
+ )
>
> # Perform One-Way ANOVA
> anova_result <- aov(exam_score ~ attendance_group, data = data)
>
> # Display ANOVA table
> summary(anova_result)
                Df Sum Sq Mean Sq F value  Pr(>F)
attendance_group   2    493  246.37   5.591 0.00435 **
Residuals        197   8681   44.06
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
> # Load dataset
> data <- read.csv("D:/S095 Aashka/student_exam_scores.csv")
> View(data)
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> # Create attendance groups
> data$attendance_group <- cut(
+   data$attendance_percent,
+   breaks = c(0, 70, 85, 100),
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attendance_group   2    493  246.37   5.591 0.00435 **
Residuals        197   8681   44.06
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
>
```
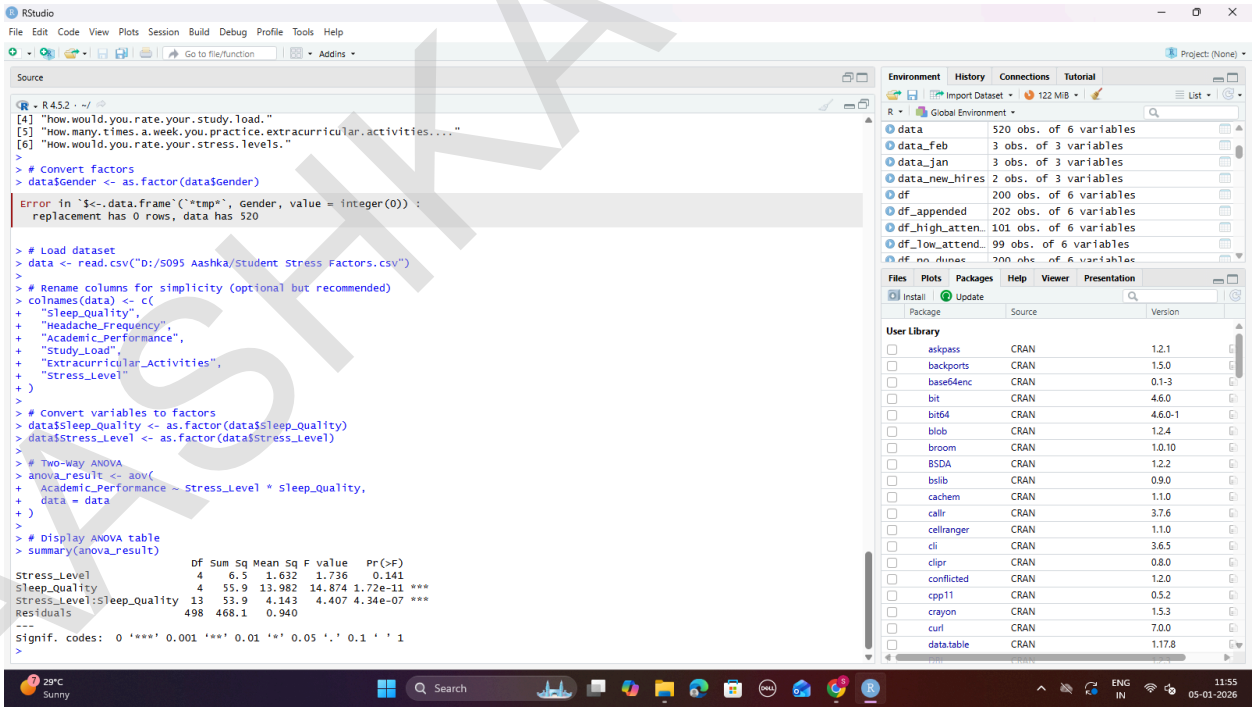

AIM:8. Performing two-way ANOVA using aov() (R).



```
[4] "How.would.you.rate.your.study.load."
[5] "How.many.times.a.week.you.practice.extracurricular.activities...."
[6] "How.would.you.rate.your.stress.levels."
>
> # Convert factors
> data$Gender <- as.factor(data$Gender)

Error in `$<-.data.frame`(`*tmp*`, Gender, value = integer(0)) :
  replacement has 0 rows, data has 520


> # Load dataset
> data <- read.csv("D:/S095 Aashka/Student Stress Factors.csv")
>
> # Rename columns for simplicity (optional but recommended)
> colnames(data) <- c(
+   "Sleep_Quality",
+   "Headache_Frequency",
+   "Academic_Performance",
+   "Study_Load",
+   "Extracurricular_Activities",
+   "Stress_Level"
+ )
>
> # Convert variables to factors
> data$Sleep_Quality <- as.factor(data$Sleep_Quality)
> data$Stress_Level <- as.factor(data$Stress_Level)
>
> # Two-way ANOVA
> anova_result <- aov(
+   Academic_Performance ~ Stress_Level * Sleep_Quality,
+   data = data
+ )
>
> # Display ANOVA table
> summary(anova_result)
                       Df Sum Sq Mean Sq F value   Pr(>F)
Stress_Level            4    6.5   1.632   1.736    0.141
Sleep_Quality           4   55.9  13.982  14.874 1.72e-11 ***
Stress_Level:Sleep_Quality  13   53.9   4.143   4.407 4.34e-07 ***
Residuals             498  468.1   0.940
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
>
```

NAME: AASHKA MISHRA
ROLL NO: S095

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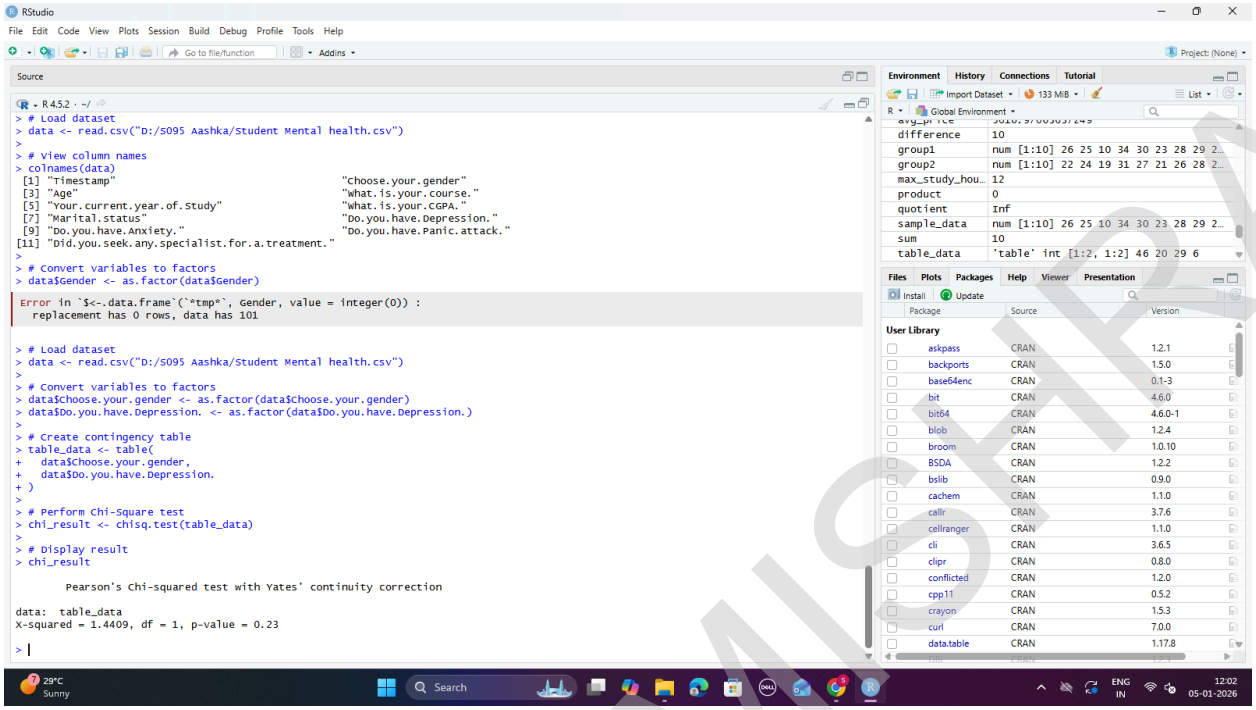
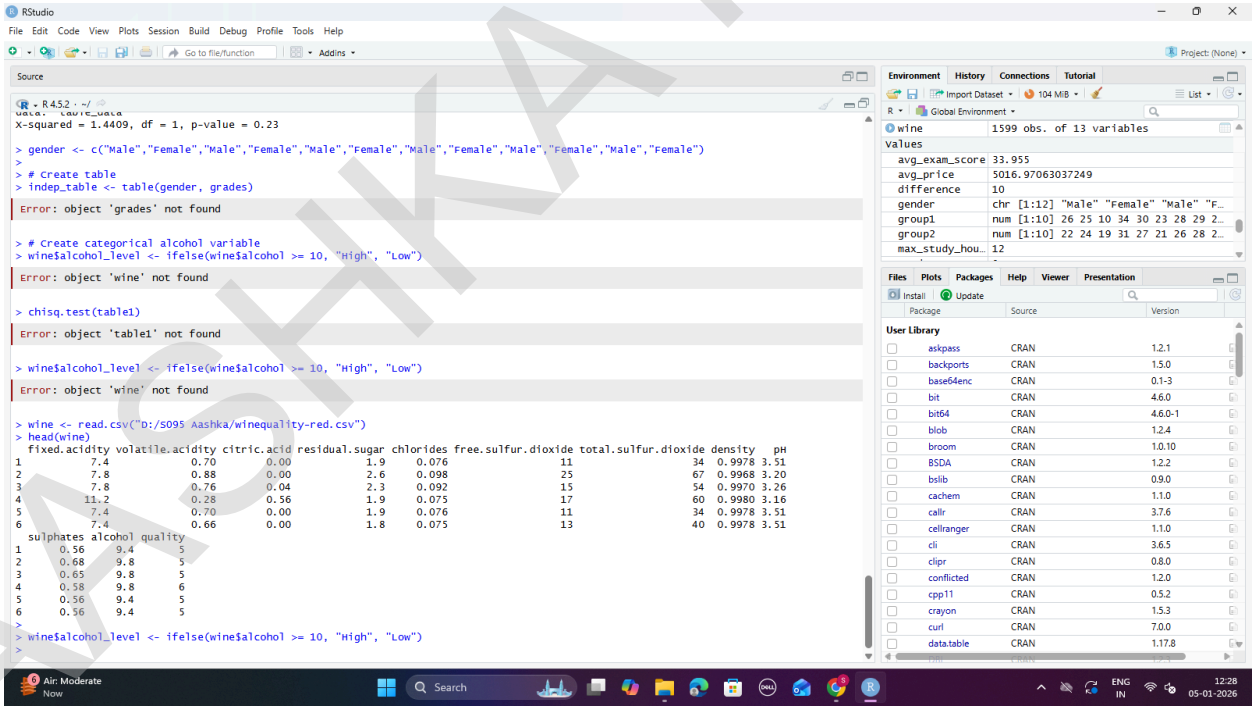
AIM:9. Conducting Chi-square tests using chisq.test() (R)



TYPE 1: INDEPENDENCE



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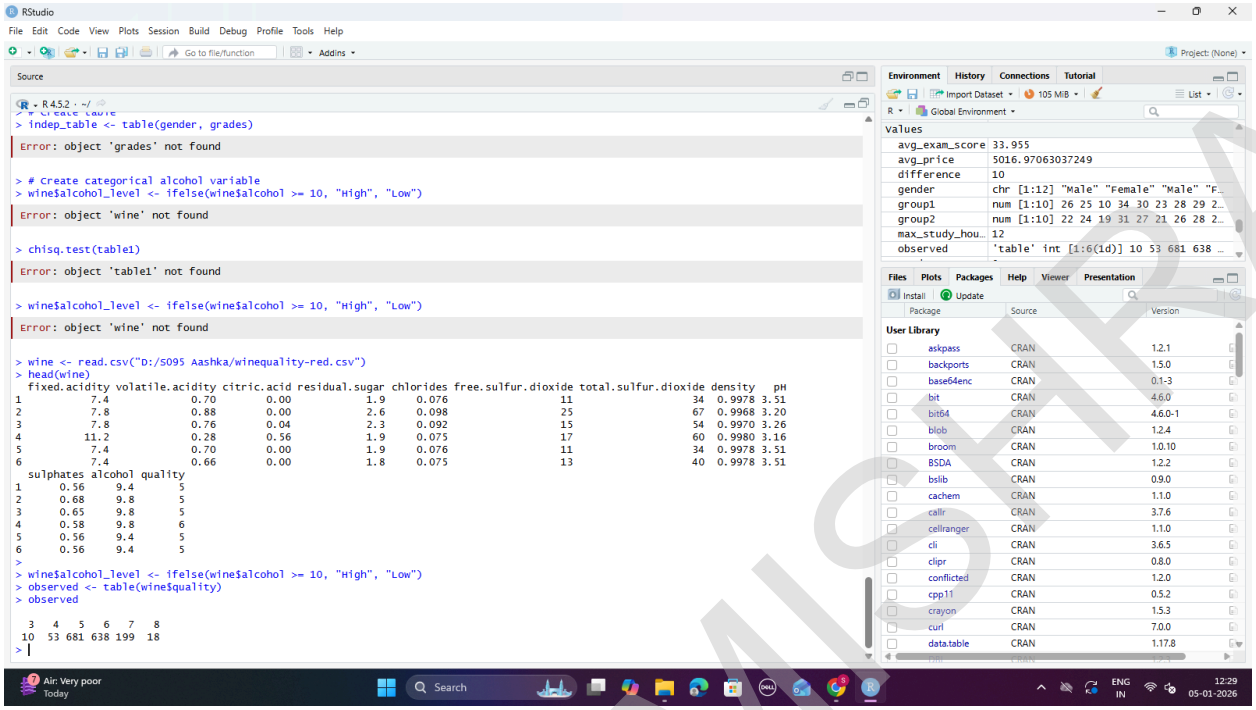
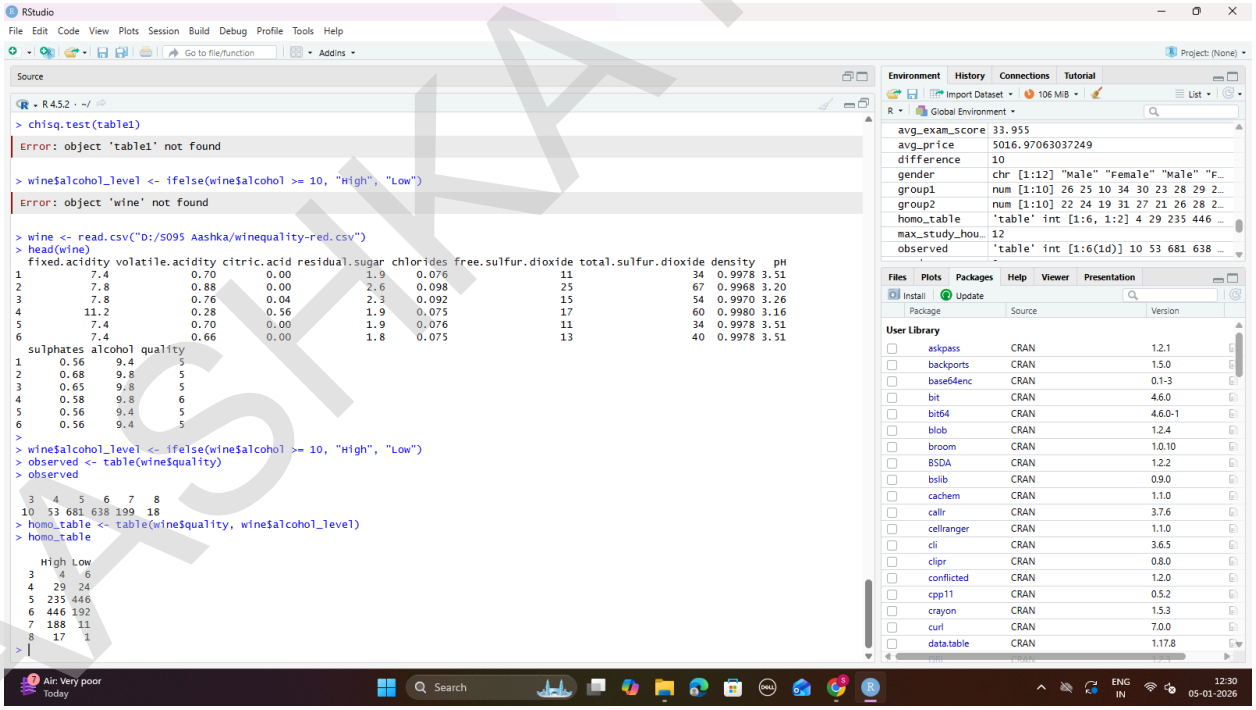
TYPE 2: GOODNESS OF FIT



TYPE 3: HOMOGENEITY



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ROLL NO: S095