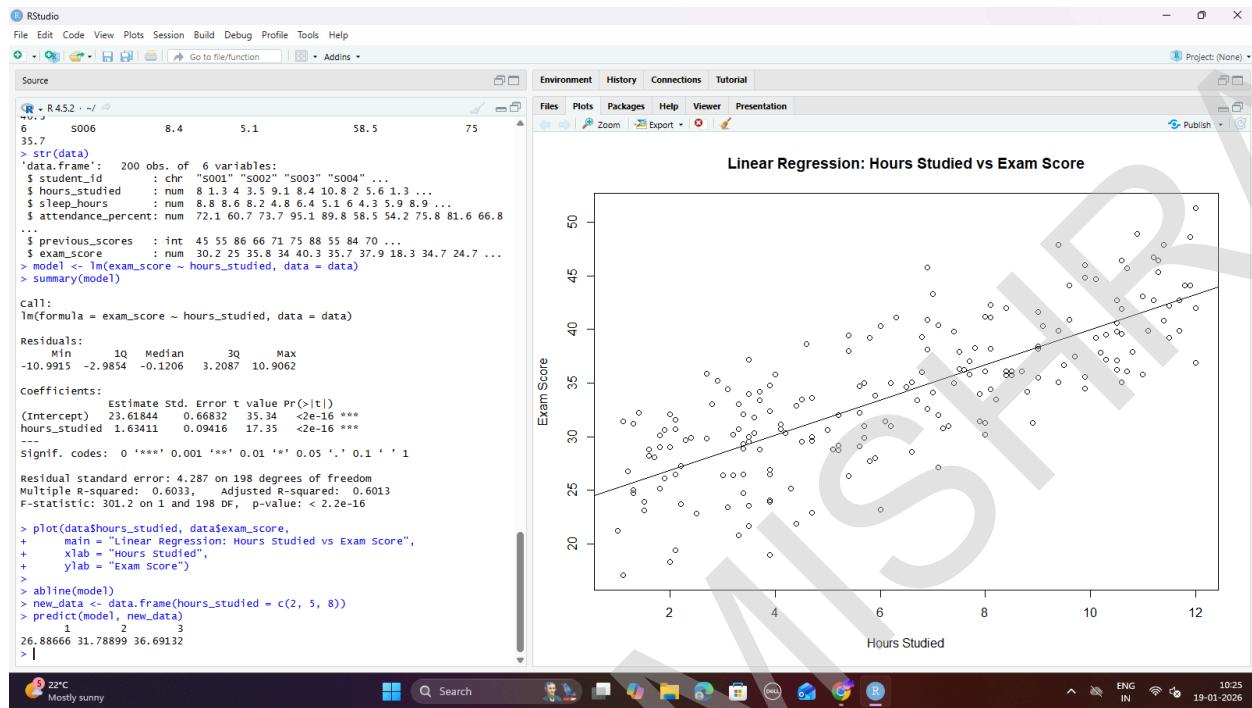


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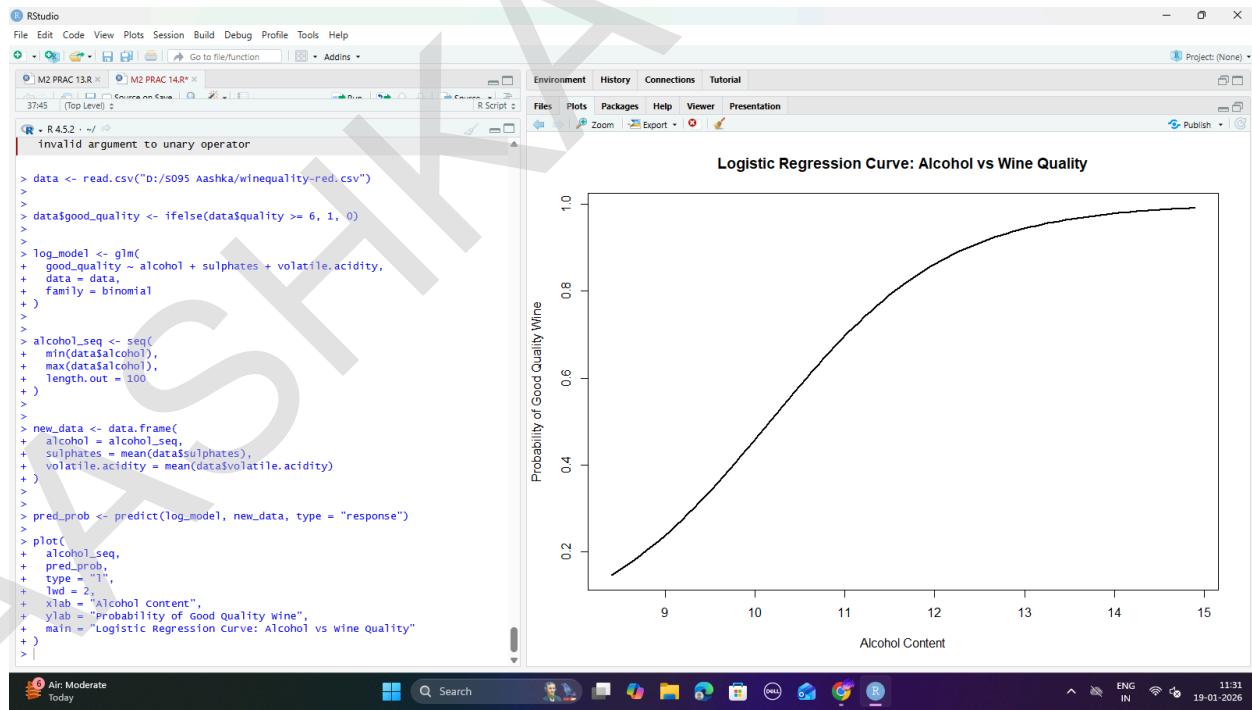
SUBJECT: DATA ANALYSIS WITH R

PRACTICAL NO. 13-15

AIM: 13 Performing linear regression analysis using lm() (R).



AIM: 14 Performing logistic regression using glm() (R).



NAME: AASHKA MISHRA

ROLL NO: S095

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SUBJECT: DATA ANALYSIS WITH R

AIM: Exporting results into external files (Excel, CSV, PDF) using `write.csv()` and `writexl ®`

The image displays three separate windows of a Windows operating system, each showing the output of an R script. The windows are arranged vertically.

Top Window: Shows the output of a logistic regression model. The command used is `glm(formula = good_quality ~ alcohol + sulphates + volatile.acidity, family = binomial, data = wine_data)`. The output includes coefficients, standard errors, z-values, and p-values. It also shows the dispersion parameter for the binomial family, null deviance, residual deviance, and AIC.

```
Call:  
glm(formula = good_quality ~ alcohol + sulphates + volatile.acidity,  
     family = binomial, data = wine_data)  
  
Coefficients:  
             Estimate Std. Error z value Pr(>|z|)  
(Intercept) -9.7197    0.78389 -12.399 < 2e-16 ***  
alcohol       0.99736   0.06907 14.439 < 2e-16 ***  
sulphates     1.87346   0.36942  5.071 3.95e-07 ***  
volatile.acidity -3.12166  0.36469 -8.560 < 2e-16 ***  
---  
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
  
(Dispersion parameter for binomial family taken to be 1)  
  
Null deviance: 2209.0 on 1598 degrees of freedom  
Residual deviance: 1724.5 on 1595 degrees of freedom  
AIC: 1732.5  
  
Number of Fisher Scoring iterations: 4
```

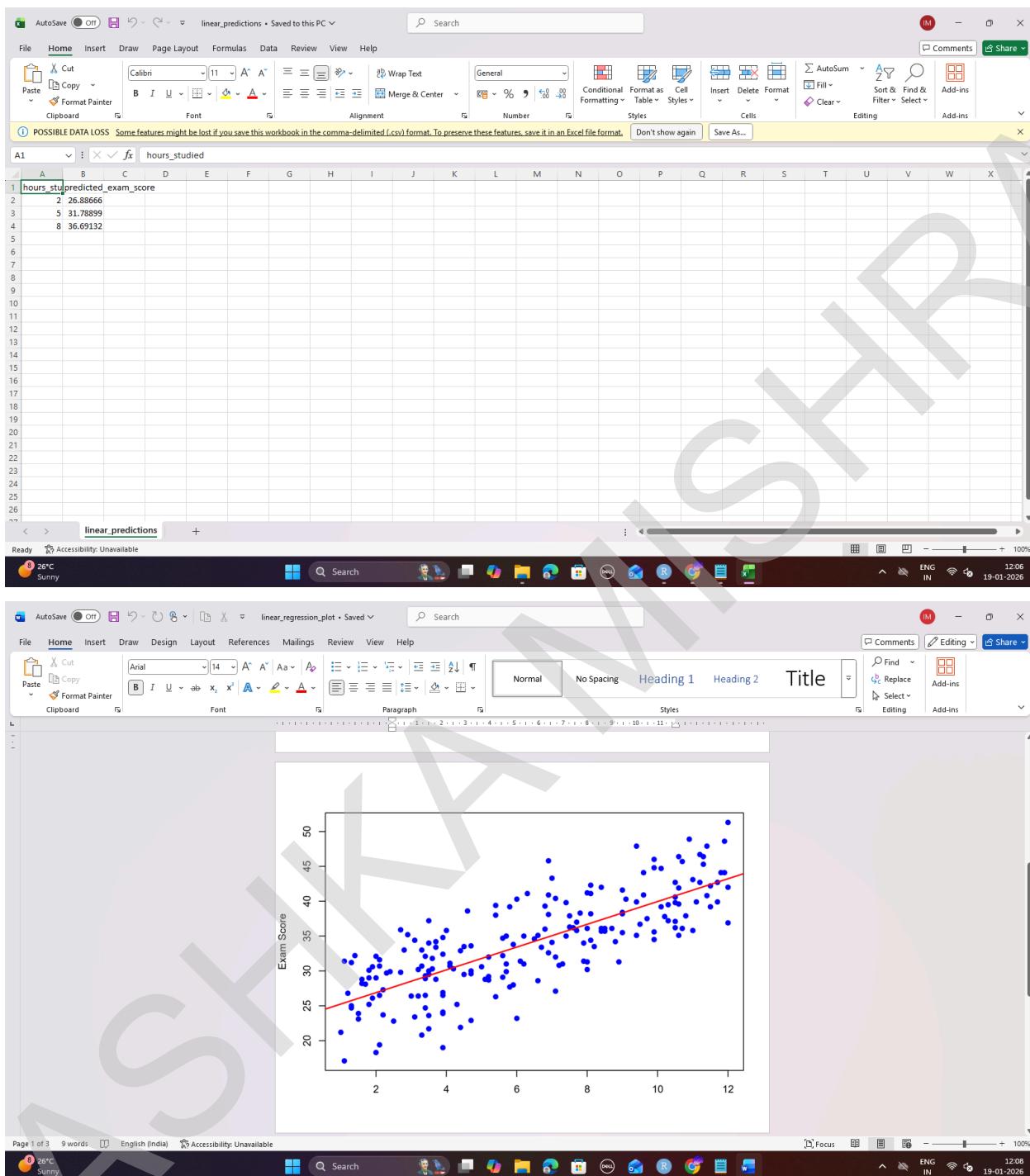
Middle Window: Shows the output of a linear regression model. The command used is `lm(formula = exam_score ~ hours_studied, data = student_data)`. The output includes residuals, coefficients, and statistical significance codes. It also provides the residual standard error, multiple R-squared, adjusted R-squared, F-statistic, and p-value.

```
Call:  
lm(formula = exam_score ~ hours_studied, data = student_data)  
  
Residuals:  
    Min      1Q      Median      3Q      Max  
-10.9915 -2.9854 -0.1206  3.2087 10.9062  
  
Coefficients:  
             Estimate Std. Error t value Pr(>|t|)  
(Intercept) 23.61844   0.66832 35.34 <2e-16 ***  
hours_studied 1.63411   0.09416 17.35 <2e-16 ***  
---  
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
  
Residual standard error: 4.287 on 198 degrees of freedom  
Multiple R-squared:  0.6033, Adjusted R-squared:  0.6013  
F-statistic: 301.2 on 1 and 198 DF,  p-value: < 2.2e-16
```

Bottom Window: Shows the output of a linear regression model. The command used is `lm(formula = exam_score ~ hours_studied, data = student_data)`. The output includes residuals, coefficients, and statistical significance codes. It also provides the residual standard error, multiple R-squared, adjusted R-squared, F-statistic, and p-value.

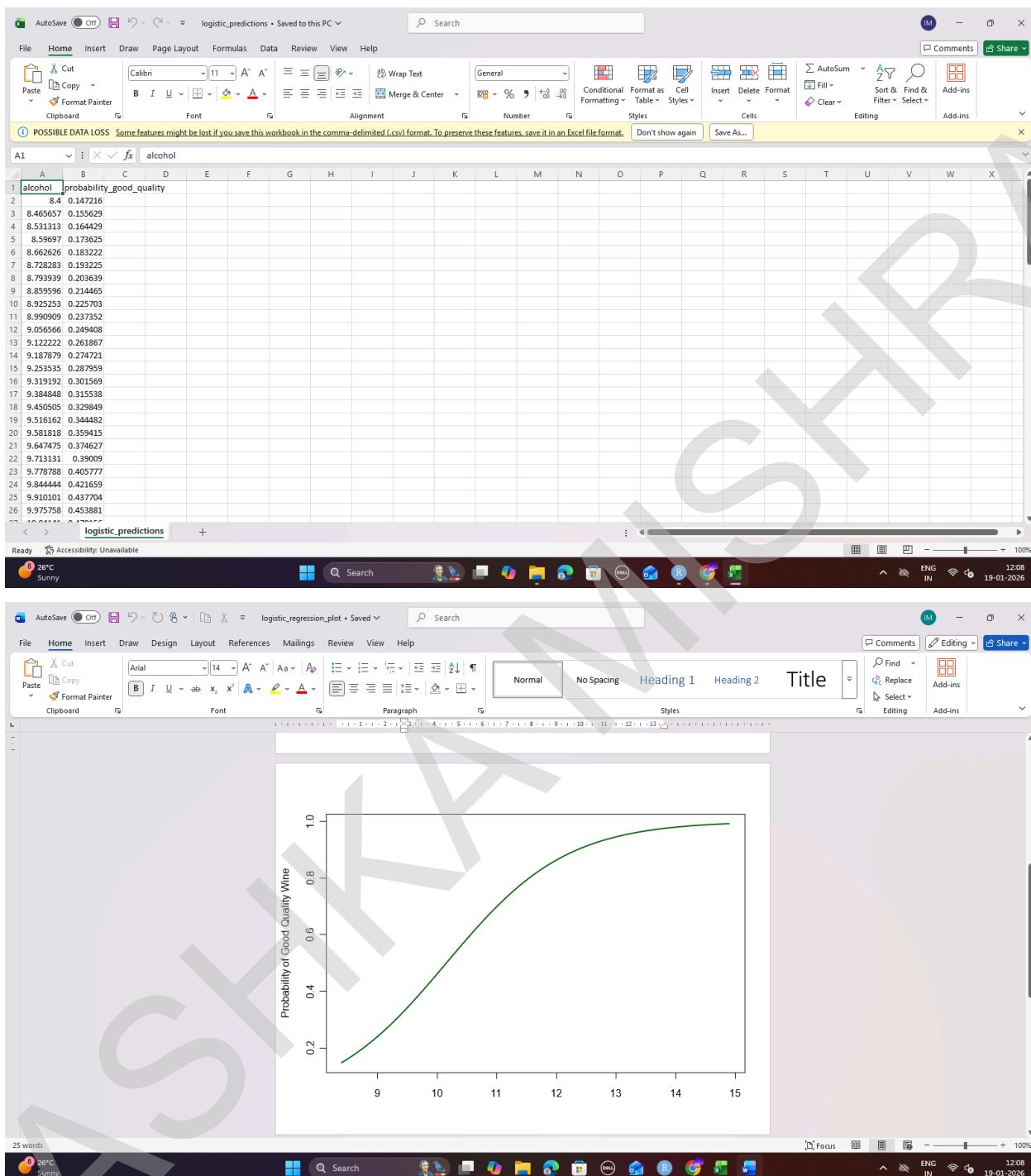
```
Call:  
lm(formula = exam_score ~ hours_studied, data = student_data)  
  
Residuals:  
    Min      1Q      Median      3Q      Max  
-10.9915 -2.9854 -0.1206  3.2087 10.9062  
  
Coefficients:  
             Estimate Std. Error t value Pr(>|t|)  
(Intercept) 23.61844   0.66832 35.34 <2e-16 ***  
hours_studied 1.63411   0.09416 17.35 <2e-16 ***  
---  
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1  
  
Residual standard error: 4.287 on 198 degrees of freedom  
Multiple R-squared:  0.6033, Adjusted R-squared:  0.6013  
F-statistic: 301.2 on 1 and 198 DF,  p-value: < 2.2e-16
```

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SUBJECT: DATA ANALYSIS WITH R



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