

Sheth I.u.j. And sir m.v. college of arts science and commerce

Practical no. mod 2 14th

Aim: Performing logistic regression using glm() (R).

File Edit Code View Plots Session Build Debug Profile Tools Help

The screenshot displays the R Studio interface. The 'Source' pane on the left contains the following R code:

```
> df_model$AQI_Binary <- ifelse(df_model$aqi_index > 100, 1, 0)
>
> model <- glm(AQI_Binary ~ pm2_5,
+             data = df_model,
+             family = binomial)

Warning message:
glm.fit: fitted probabilities numerically 0 or 1 occurred

> summary(model)

Call:
glm(formula = AQI_Binary ~ pm2_5, family = binomial, data = df_model)

Coefficients:
              Estimate Std. Error z value Pr(>|z|)
(Intercept) -2.651436    0.082158  -32.27  <2e-16 ***
pm2_5         0.128081    0.002407   53.21  <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: 18414  on 52559  degrees of freedom
Residual deviance: 10306  on 52558  degrees of freedom
AIC: 10310

Number of Fisher Scoring iterations: 9

>
> predicted_prob <- predict(model, type = "response")
>
> plot(df_model$pm2_5, predicted_prob,
+      xlab = "PM2.5",
+      ylab = "Probability of Bad AQI",
+      main = "Logistic Regression: AQI vs PM2.5",
+      pch = 16, col = "blue")
```

The 'Environment' pane on the right shows the following objects:

| Object | Value |
|---------------|-------|
| num2 | 5 |
| numb | in |
| numb2 | nui |
| numb3 | nui |
| p_value | 0.0 |
| p_values | nui |
| predicted | Nai |
| predicted_... | Lai |
| predicted_... | Lai |

The 'Files' pane on the right shows a list of files in the 'Home' directory:

- yahooStock.csv
- YB - XceedNet
- YB - XceedNet
- mod2 14th.R
- mod2 13th.R
- my_data.csv
- my_data.xlsx
- my_data.pdf
- logistic_regress
- linear_regressio
- practical_expor
- practical_expor
- practical_expor
- mod2 13th .ndf

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