**Normality assumption for rating variable:**

The rating predictor conforms well to the assumption of normality. The QQ plot and the histogram display a straight diagonal line and a roughly normal distribution, respectively. While some outliers are present to the left and right in the box plot, they do not significantly impact the overall distribution. Additionally, the Shapiro-Wilk test yielded a p-value of 0.204, indicating a failure to reject the null hypothesis (Ho). This suggests that the errors associated with the Rating predictor follow a normal distribution pattern. Therefore, there is no violation of the normality assumption for this predictor, and regression analyses involving the rating predictor can proceed with confidence in the normality of the errors.

```{r}
# QQ-plot for this model
p3 <- ggplot(data = love_lm4_aug, aes(sample = .resid)) +
    geom_qq_line() +
    geom_qq() +
    theme_minimal() +
    ggtitle("Q-Q plot")
# Create a histogram of the residuals
p4 <- ggplot(data = love_lm4_aug, aes(x = .resid)) +
    geom_histogram() +
    theme_minimal() +
    ggtitle("Histogram of residual")

# Create a boxplot of the residuals
p5 <- ggplot(data = love_lm4_aug, aes(x = .resid)) +
    geom_boxplot() +
    theme_minimal() +
    ggtitle("Boxplot of residual")

plot_grid(p3, p4, p5, nrow = 1)
```

QQ plot, histogram, and boxplot for raising

Q-Q plot

Histogram of residual

Boxplot of residual
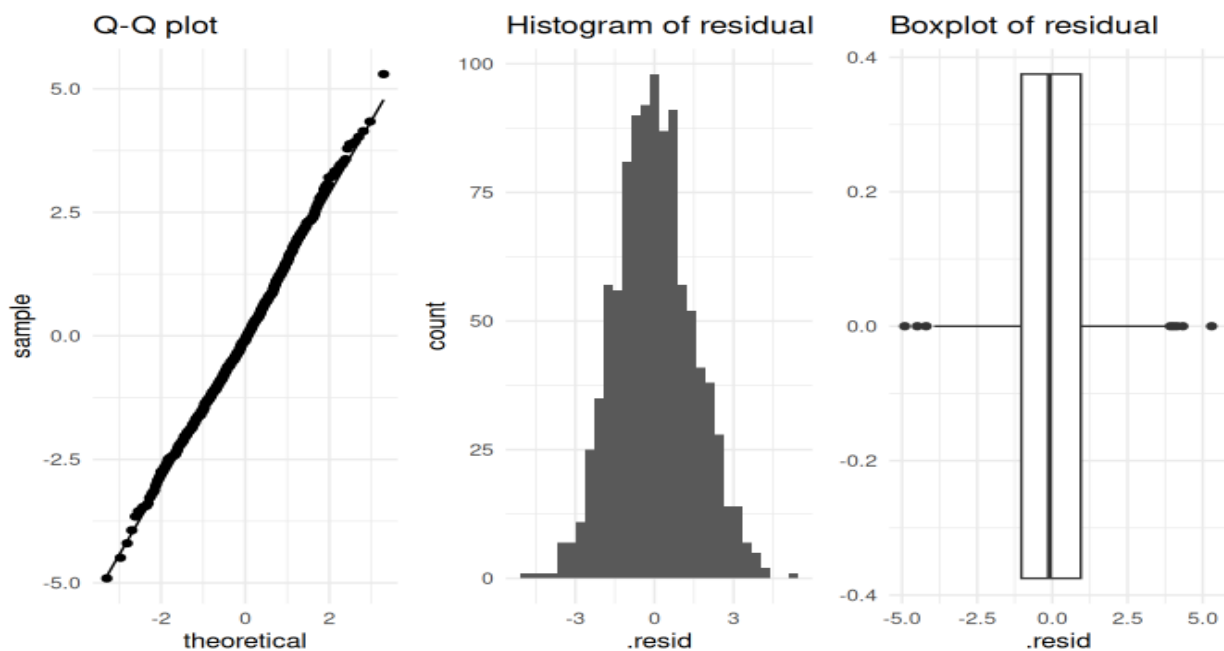
Shapiro-Wilks test:

Ho: errors are normally distributed

HA: errors are NOT normally distributed

```{r}
shapiro.test(love_lm4$residuals)
```

```
        Shapiro-Wilk normality test

  data:  love_lm4$residuals
  W = 0.99779, p-value = 0.2041
```

Because the p-value is > 0.05, fail to reject Ho and conclude the errors are normally distributed.