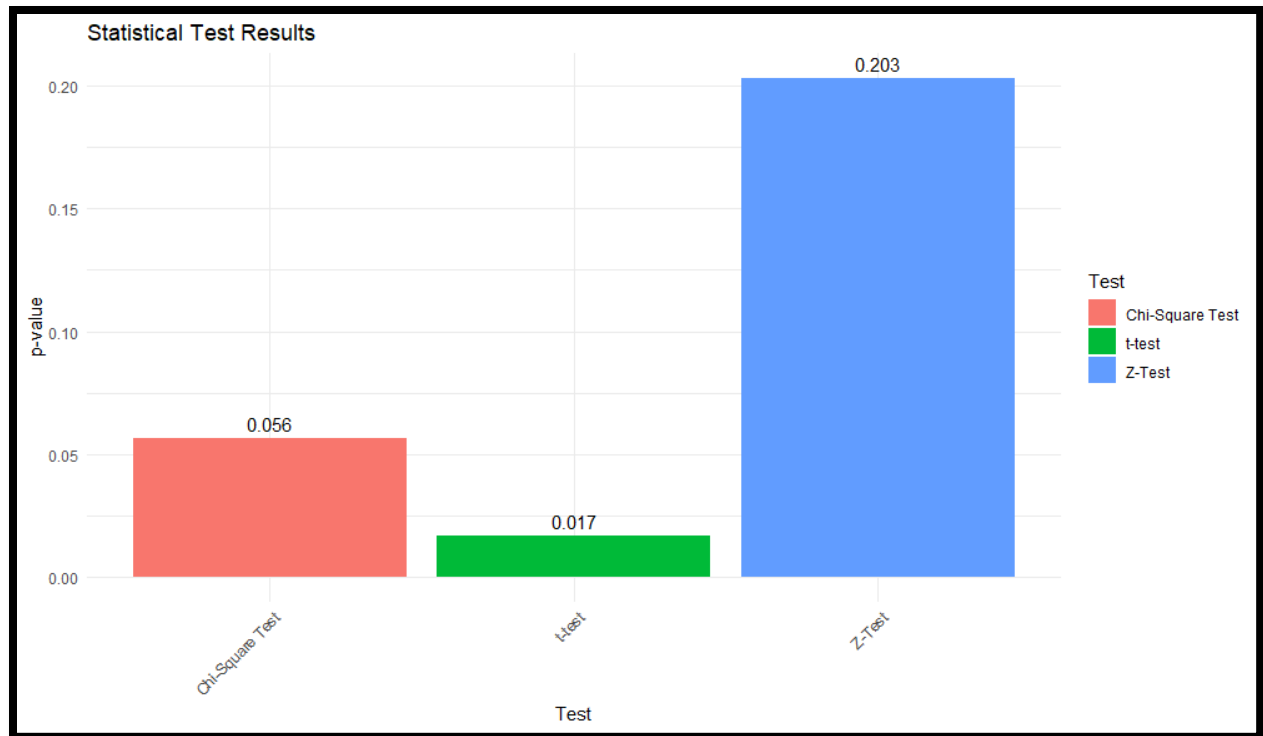


EXP:9

```
1 library(tidyverse)
2 library(ggplot2)
3
4 group1 <- c(25, 30, 28, 35, 32)
5 group2 <- c(20, 22, 18, 25, 28)
6 t_test_result <- t.test(group1, group2)
7
8 successes <- 20
9 total_trials <- 50
10 prop_test_result <- prop.test(successes, total_trials, alternative = "two.sided")
11
12 data <- matrix(c(30, 20, 15, 25), nrow = 2, byrow = TRUE)
13 chi_square_result <- chisq.test(data)
14
15 results_df <- data.frame(
16   Test = c("t-test", "Z-Test", "Chi-Square Test"),
17   p_value = c(t_test_result$p.value, prop_test_result$p.value, chi_square_result$p.value)
18 )
19
20 ggplot(results_df, aes(x = Test, y = p_value, fill = Test)) +
21   geom_bar(stat = "identity") +
22   geom_text(aes(label = round(p_value, 3)), vjust = -0.5) +
23   labs(x = "Test", y = "p-value", title = "Statistical Test Results") +
24   theme_minimal() +
25   theme(axis.text.x = element_text(angle = 45, hjust = 1))
26
27
```

Environment	History	Connections	Tutorial
R 155 MiB			
Global Environment			
Data			
chi_square_result	List of 9		
data	num [1:2, 1:2] 30 15 20 25		
prop_test_result	List of 9		
results_df	3 obs. of 2 variables		
t_test_result	List of 10		
Values			
group1	num [1:5] 25 30 28 35 32		
group2	num [1:5] 20 22 18 25 28		
successes	20		
total_trials	50		



EXP:10

```

1 library(tidyverse)
2 library(ggplot2)
3
4 group1 <- c(30, 35, 40, 45, 50)
5 group2 <- c(25, 30, 35, 40, 45)
6 group3 <- c(20, 25, 30, 35, 40)
7
8 one_way_anova_result <- aov(c(group1, group2, group3) ~ rep(c("Group1", "Group2", "Group3"), each = 5))
9
10 data <- data.frame(
11   value = c(group1, group2, group3),
12   factor1 = rep(c("A", "B", "C"), each = 5)
13 )
14 two_way_anova_result <- aov(value ~ factor1, data = data)
15
16 one_way_p <- summary(one_way_anova_result)[[1]]$`Pr(>F)`[1]
17 two_way_p <- summary(two_way_anova_result)[[1]]$`Pr(>F)`[1]
18
19 anova_results <- data.frame(
20   Analysis = c("One-way ANOVA", "Two-way ANOVA"),
21   p_value = c(one_way_p, two_way_p)
22 )
23
24 ggplot(anova_results, aes(x = Analysis, y = p_value, fill = Analysis)) +
25   geom_bar(stat = "identity", width = 0.5) +
26   geom_text(aes(label = format(p_value, scientific = TRUE)), vjust = -0.5, size = 4) +
27   labs(title = "ANOVA Results", y = "p-value") +
28   theme_minimal() +
29   theme(legend.position = "none")
30

```

17:60 (Top Level) R Script

