Install and load required libraries

```
install.packages("ggplot2")
install.packages("dplyr")
install.packages("tibble")
```

```
     Installing package into ‘/usr/local/lib/R/site-library’
     (as ‘lib’ is unspecified)

     Installing package into ‘/usr/local/lib/R/site-library’
     (as ‘lib’ is unspecified)

     Installing package into ‘/usr/local/lib/R/site-library’
     (as ‘lib’ is unspecified)
```

```
library(ggplot2)
library(dplyr)
library(tibble)
```

Create a data frame with the provided data

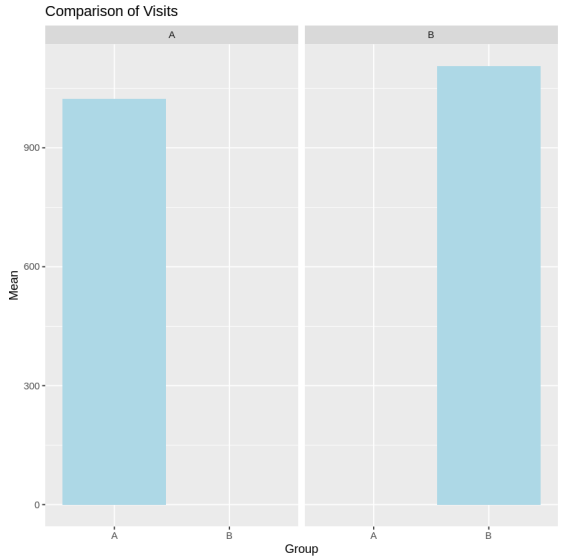
- Website Old as A
- Website New as B

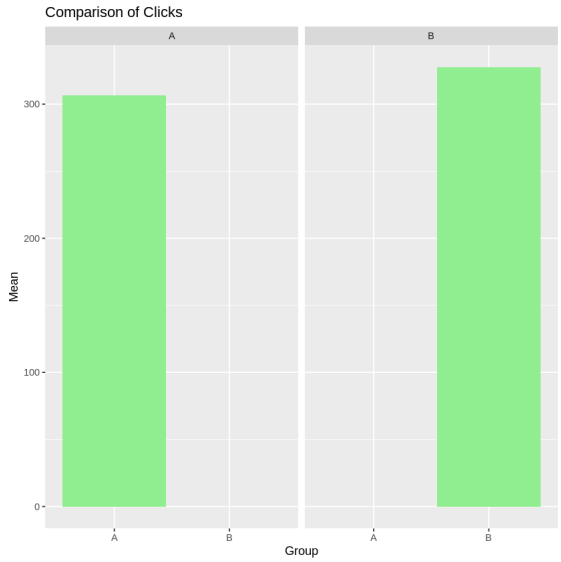
```
data <- tribble(
  ~Date, ~Group, ~Visits, ~Clicks, ~Signups,
  "2023-01-01", "A", 1000, 300, 50,
  "2023-01-01", "B", 1100, 320, 60,
  "2023-01-02", "A", 980, 290, 55,
  "2023-01-02", "B", 1050, 310, 58,
  "2023-01-03", "A", 1020, 305, 51,
  "2023-01-03", "B", 1060, 315, 62,
  "2023-01-04", "A", 990, 295, 54,
  "2023-01-04", "B", 1080, 325, 61,
  "2023-01-05", "A", 1035, 310, 56,
  "2023-01-05", "B", 1125, 335, 65,
  "2023-01-06", "A", 1010, 300, 53,
  "2023-01-06", "B", 1090, 320, 59,
  "2023-01-07", "A", 1055, 315, 57,
  "2023-01-07", "B", 1150, 340, 68,
  "2023-01-08", "A", 1025, 310, 55,
  "2023-01-08", "B", 1115, 330, 64,
  "2023-01-09", "A", 1075, 325, 58,
  "2023-01-09", "B", 1160, 345, 70,
  "2023-01-10", "A", 1040, 315, 56,
  "2023-01-10", "B", 1130, 335, 66
)
```

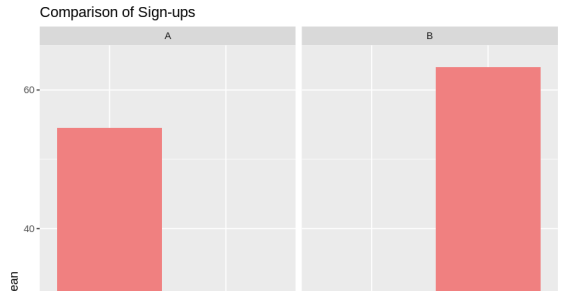
Create comparison charts for Visits, Clicks, and Sign-ups

```
comparison_plots <- ggplot(data, aes(x = Group)) +
  geom_bar(aes(y = Visits), stat = "summary", fun = "mean", fill = "lightblue") +
  ggtitle("Comparison of Visits") +
  facet_wrap(~ Group, ncol = 2) +
  labs(y = "Mean")

comparison_plots2 <- ggplot(data, aes(x = Group)) +
  geom_bar(aes(y = Clicks), stat = "summary", fun = "mean", fill = "lightgreen") +
  ggtitle("Comparison of Clicks") +
  facet_wrap(~ Group, ncol = 2) +
  labs(y = "Mean")

comparison_plots3 <- ggplot(data, aes(x = Group)) +
  geom_bar(aes(y = Signups), stat = "summary", fun = "mean", fill = "lightcoral") +
  ggtitle("Comparison of Sign-ups") +
  facet_wrap(~ Group, ncol = 2) +
  labs(y = "Mean")

# Print the comparison plots
print(comparison_plots)
```

```
print(comparison_plots2)
print(comparison_plots3)
```







Perform t-tests for all metrics

```
metrics <- c("Visits", "Clicks", "Signups")

significant_differences <- list()

for (metric in metrics) {
  t_test_result <- t.test(data[data$Group == "A", metric], data[data$Group == "B", metric])
```

```
  if (t_test_result$p.value < 0.05) {
    significant_differences[[metric]] <- TRUE
    cat(paste("The difference in", metric, "is statistically significant.\n"))
  } else {
    significant_differences[[metric]] <- FALSE
    cat(paste("There is no statistically significant difference in", metric, "between the two groups.\n"))
  }
}
```

```
The difference in Visits is statistically significant.
The difference in Clicks is statistically significant.
The difference in Signups is statistically significant.
```