Assignment 1

1. Perform basic arithmetic operations

```
a = int(input("Enter a number: "))
b = int(input("Enter a number: "))
print("After addition: ", a+b)
print("After subtraction: ",a-b)
print("After multiplication: ", a*b)
print("After division: ", a/b)
```

Output

Enter a number: 8

Enter a number: 2

After addition: 10

After subtraction: 6

After multiplication: 16

After division: 4.0

2. Through ggplot using staticstics library in python calculate the mean, median, mode and standard deviation,varience with Sample data for 15 students

```
import statistics
import pandas as pd
from plotnine import ggplot, aes, geom_point, geom_line, geom_smooth, theme_minimal
# Sample data for 15 students (e.g., scores)
list_of_numbers = [95, 82, 88, 74, 91, 65, 89, 77, 83, 85, 92, 78, 90, 80, 76]
# Calculate statistics
```

```
mean = statistics.mean(list_of_numbers)
median = statistics.median(list_of_numbers)
mode = statistics.mode(list_of_numbers)
std_dev = statistics.stdev(list_of_numbers)
variance = statistics.variance(list_of_numbers)
# Print statistics
print("Mean: ", mean)
print("Median: ", median)
print("Mode: ", mode)
print("Standard Deviation: ", std_dev)
print("Variance: ", variance)

 # Convert the list into a pandas DataFrame for ggplot

data = pd.DataFrame({'Score': list_of_numbers, 'Student': range(1,
len(list_of_numbers) + 1)})

# Create a plot

plot = (ggplot(data, aes(x='Student', y='Score'))
    + geom_point(color='blue')  # Scatter plot of the points
    + geom_line(color='red')  # Line connecting the points
    + geom_smooth(method='lm', color='green', se=False)  # Add a linear
regression line
    + theme_minimal()  # Use a minimal theme
    )
print(plot)
```

Output