

**Assignment 1:** Basic data manipulation and analysis techniques using Python.

**Dataset:**

For this assignment, we will use the built-in `titanic` dataset from the `seaborn` library. The dataset contains information about the passengers on the Titanic, such as their age, sex, class, and whether they survived or not.

**Reading the Data:**

1. Import the necessary libraries and load the `titanic` dataset from the `seaborn` library into a `pandas DataFrame`.

**Data Exploration and Manipulation:**

2. Display the first 5 rows of the dataset.
3. Print the column headers of the dataset.
4. Change the column headers to uppercase.

**Descriptive Statistics:**

5. Calculate and display the descriptive statistics of the dataset.

**Data Cleaning:**

6. Check for missing values in the dataset and print the total number of missing values for each column.
7. Fill the missing values in the `AGE` column with the median age.

**Data Analysis:**

8. Find the average age of the passengers.
9. Find the number of passengers who survived and those who did not.
10. Calculate the survival rate (percentage of passengers who survived).

**Data Visualization:**

11. Plot a histogram of the ages of the passengers.
12. Create a bar plot showing the number of passengers in each class.
13. Create a count plot showing the number of survivors and non-survivors.