Pandas Dataframe Practice

Dataset: Titanic dataset.

1. Write a program to select all rows where the "Sex" column is equal to "female".
2. Extract the "Name" and "Age" columns of passengers from index 10 to 20 using slicing.
3. Write a program to retrieve rows where passengers embarked from "C" and only display their "Fare" and "Pclass".
4. Write a program to get rows for the first 5 passengers who paid a fare of more than 50 and sort the result by "Age".
5. Select all columns except the last two, using slicing.
6. Write a program to find rows where passengers' age is either below 18 or above 60, and display their "Name" and "Survived" status.
7. Write a program to filter passengers who survived (1) and are males. Sort the result by "Fare" in descending order.
8. Retrieve passengers whose "Fare" is greater than 100 and "Age" is not null.
9. Write a program to select the first 10 rows of passengers where "Age" is greater than the median age of all passengers.
10. Write a program to find the rows where the "Cabin" column is null, and extract the "Name" and "Ticket" columns for those passengers.

11. Write a program to filter passengers whose "SibSp" (siblings/spouses aboard) is greater than 1, and "Age" is less than 30. Show only their "Name", "Age", and "SibSp".
12. Assign ranks to passengers based on their "Fare", with higher fares getting higher ranks. Allow ties in the ranking.
13. Write a program to check if any column in the dataset contains missing values. If yes, display the column names.
14. Identify duplicate entries in the dataset based on the "Name" column and remove them permanently.
15. Extract passengers whose "Pclass" is either 1 or 3 and store their information in a new DataFrame.
16. Calculate the correlation between "Fare" and "Age" and display the result.
17. Remove the "Cabin" column from the dataset in such a way that it cannot be recovered.
18. Replace all missing values in the "Embarked" column with the value that occurs most frequently in it.
19. Create a new column named "Above_Avg_Age" that stores True if a passenger's age is greater than the dataset's average age, otherwise False.
20. Identify rows where any column contains NaN values and remove all such rows from the dataset.