

## Beginner Questions

1. How do you import the Pandas library in Python?
2. How can you create a DataFrame from a dictionary? Provide a code example.
3. What is the function to read a CSV file into a DataFrame?
4. How do you display the first 5 rows of a DataFrame?
5. How can you access the columns of a DataFrame?
6. What method would you use to get the summary statistics of a DataFrame?
7. How do you drop a column from a DataFrame? Provide a code example.
8. How can you filter rows in a DataFrame based on a condition?
9. What is the purpose of the `iloc` method in Pandas?
10. How do you rename columns in a DataFrame? Provide a code example.

## Intermediate Questions

1. How can you handle missing values in a DataFrame?
2. What is the difference between `loc` and `iloc` in Pandas?
3. How do you group data in a DataFrame and perform aggregation?
4. Explain how you can merge two DataFrames on a common column.
5. How do you create a pivot table in Pandas? Provide a brief explanation.
6. What function is used to sort data in a DataFrame by a specific column?
7. How do you apply a custom function to each element of a DataFrame?
8. How can you concatenate two DataFrames along rows?
9. What is the function to convert a DataFrame into a NumPy array?
10. How can you handle duplicate rows in a DataFrame?

## Advanced Questions

1. How do you work with time series data in Pandas?
2. What method can be used to resample time series data in Pandas?
3. Explain the use of the `apply` function in Pandas with an example.
4. How can you create a DataFrame with a multi-level index?
5. What is the purpose of the `transform` method in Pandas?
6. How do you handle categorical data in Pandas?
7. Explain how to use the `query` method in Pandas for filtering data.
8. How can you perform a left join on two DataFrames?

9. What method can be used to set a DataFrame's index to a specific column?
10. How do you change the data type of a column in a DataFrame?
11. Explain how to use `pd.read_excel` to read Excel files into Pandas.
12. What is the function to save a DataFrame to a CSV file?
13. How can you create a new column based on existing columns?
14. Describe how to handle large datasets in Pandas efficiently.
15. How can you visualize data from a DataFrame using Pandas?
16. What is the purpose of the `cut` function in Pandas?
17. How do you get the unique values of a column in a DataFrame?
18. Explain how to perform hierarchical indexing in Pandas.
19. How can you use the `fillna` method to handle missing data?
20. What is the difference between `merge` and `join` in Pandas?
21. How do you use the `pivot` method to reshape data?
22. Describe how to use the `shift` method with time series data.
23. What method can be used to remove rows with missing values?
24. How do you perform a rolling window operation on a DataFrame?
25. Explain how to use the `melt` function to unpivot a DataFrame.
26. How can you handle JSON data with Pandas?
27. What is the purpose of the `sample` method in Pandas?
28. How do you compute the correlation matrix of a DataFrame?
29. Explain the `resample` method with an example.
30. How can you optimize the performance of Pandas operations?