# 1. What is Pandas and why is it used in data science?

Tests your understanding of Pandas as a core data analysis library for structured data.

# 2. How do you create a DataFrame from a dictionary or CSV file?

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# 3. What is the difference between .loc[] and .iloc[]?

.loc[] is label-based, .iloc[] is index-based.

# 4. How do you handle missing data in a DataFrame?

Use methods like isnull(), dropna(), fillna().

# 5. How do you perform group-by operations in Pandas?

Use groupby() and aggregation functions like mean(), sum().

# 6. How do you merge, join, or concatenate DataFrames?

Use merge(), concat(), or join() depending on the operation.

# 7. What is the difference between apply(), map(), and applymap()?

map() is for Series, apply() is for Series/DataFrames, applymap() is for element-wise ops.

# 8. How do you filter rows based on a condition?

Use boolean indexing like df[df['column'] > 10].

# 9. How do you calculate basic statistics (mean, median, std) in Pandas?

Use df.mean(), df.median(), df.std().

# 10. How do you identify and remove duplicate rows?

Use duplicated() to find, drop\_duplicates() to remove.

# 11. How do you convert data types of columns?

Use astype(), e.g., df['col'] = df['col'].astype(int).

# 12. How do you handle date/time data in Pandas?

Use to\_datetime(), dt accessor, set\_index('date').

# 13. How do you sort a DataFrame by column values or index?

Use sort\_values() and sort\_index().

# 14. How do you select specific rows and columns in a DataFrame?

Use loc[] for labels, iloc[] for index positions.

# 15. How do you reshape a DataFrame (pivot, melt, stack)?

Use pivot(), melt(), stack(), unstack() for reshaping.