How can you access the last character of a string 'S' containing 7 characters?

- ○ S[7]

- ○ S[1]

- ● S[-1]

- ○ S.end(1)

What is the primary purpose of using time deltas in Python?

To extract the current local time.

To format dates and times in different styles.

To convert time zones.

To express durations of time.

What is the significance of the 'self' keyword in Python class methods?

It refers to the class that contains the method.

It indicates that a method is private and cannot be accessed outside the class.

It is used to call other methods within the same class.

It represents the instance of the class on which the method is called.

What does opening a file in 'w' mode do if the file already exists?

○ Reads the content of the file.

○ Appends new content to the end of the file.

● Erases all the existing content in the file before writing.

○ Opens the file for reading and writing without erasing the content.

What HTTP status code indicates a successful GET request?

- 404
- ● 200
- 500
- 400

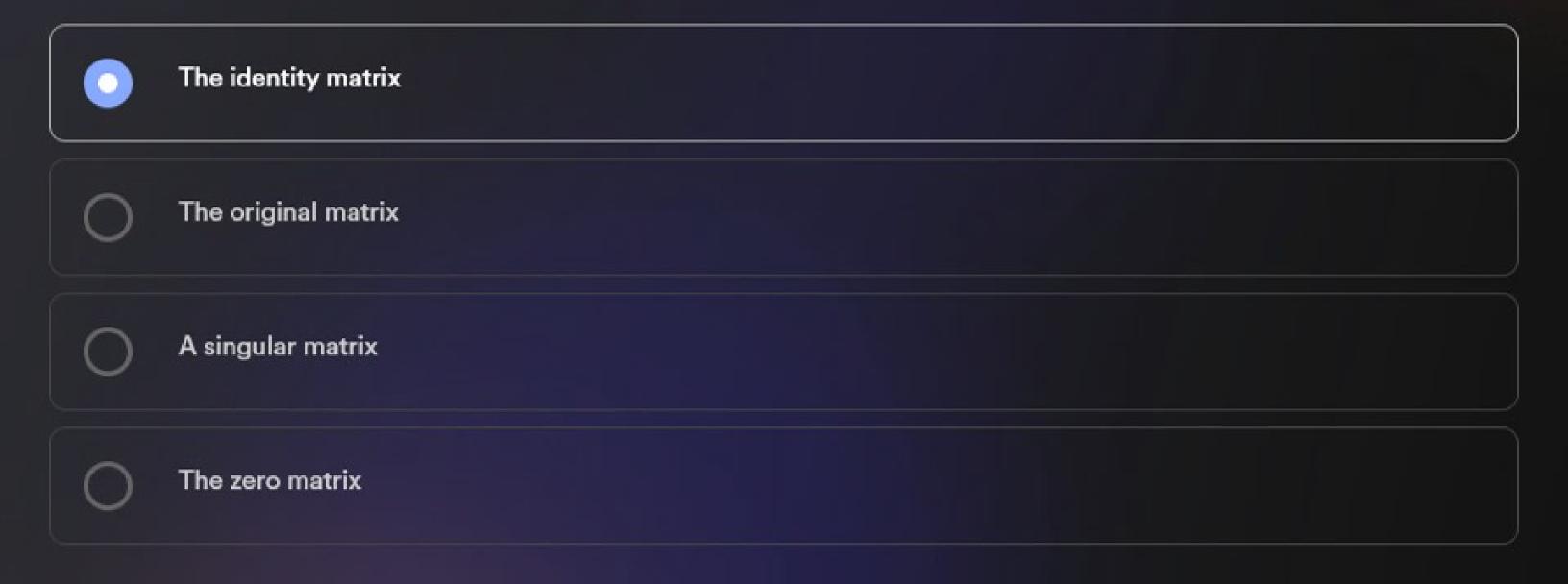Which statement best describes the use of a BLOB data type in MySQL?

Intended for numeric types that require precise calculations.

Designated for storing boolean values.

Best used for storing large text data.

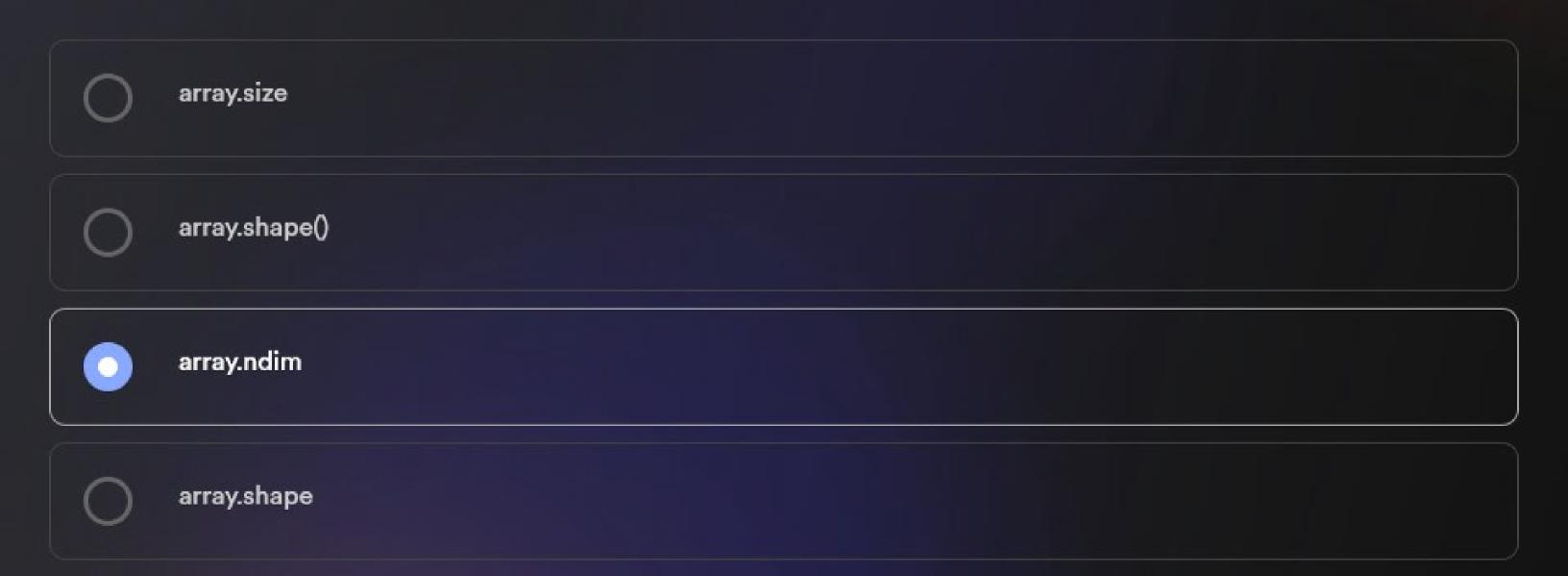Used for storing binary data like images or serialized objects.

What will be the result of multiplying a matrix by its inverse using NumPy?

The identity matrix

The original matrix

A singular matrix

The zero matrix

What command is used to determine the number of dimensions of a NumPy array?

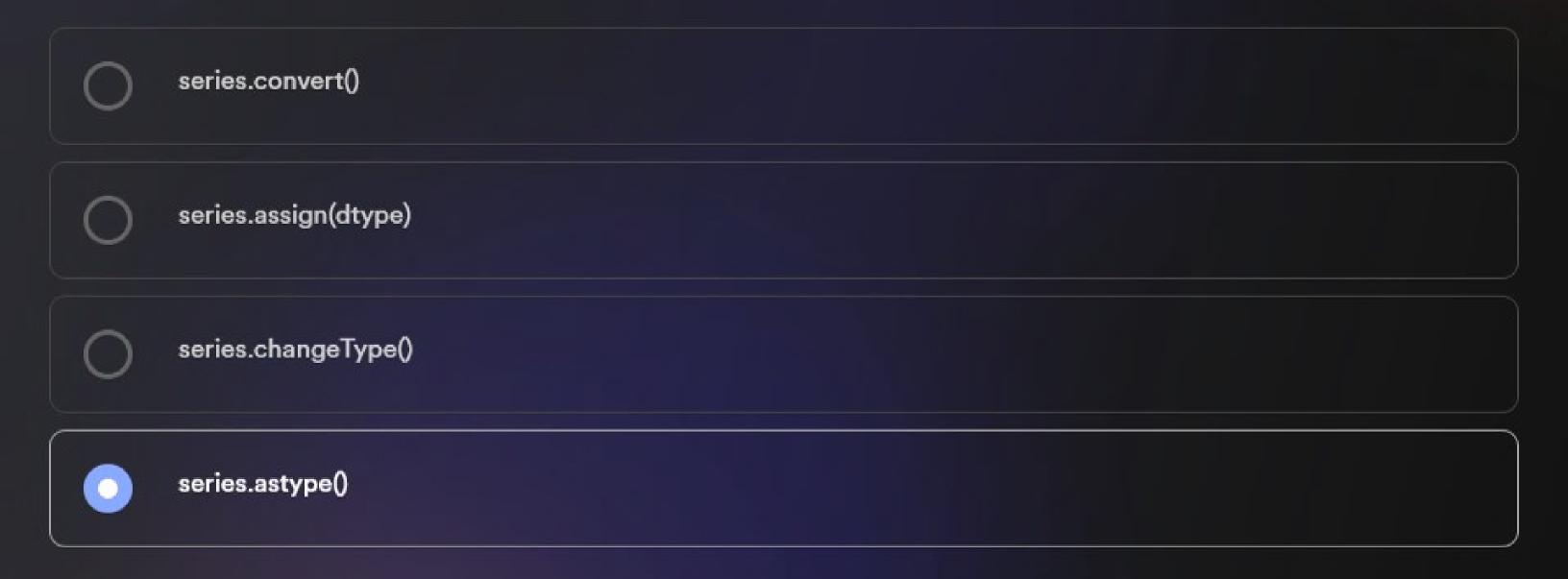○ array.size

○ array.shape()

● array.ndim

○ array.shape

What is the purpose of the modulus operator in Python?

- To perform exponentiation.

- To find the remainder of a division.

- To execute floor division.

- To negate an operand.

Which of the following tasks can pandas not do directly?

- ○ Read data from a CSV file.

- ● **Create machine learning models.**

- ○ Clean and remove null values from data.

- ○ Plot data for visualization.

What is the fundamental building block of a Pandas DataFrame?

A Dictionary

A NumPy array

A Series

A List

What operation would you use to change the data type of an existing series?

- series.convert()
- series.assign(dtype)
- series.changeType()
- ● series.astype()

What does the value_counts method in Pandas provide?

○ A list of unique values in a column.

⦿ The count of unique values in a column, sorted by frequency.

○ The number of non-null values in a column.

○ The sum of all values in a column.

What does the pandas method 'describe' primarily return?

○ Detailed information on missing or NaN values in the DataFrame.

● Summary statistics of the columns in the DataFrame.

○ An overview of the DataFrame's structure.

○ A list of all the column names in the DataFrame.

When exporting a DataFrame to a CSV file, how can you exclude the index from the output file?

- By setting the include_index parameter to False.

- ● By setting index=False in the to_csv method.

- By setting the index parameter to None.

- No need, indices are not included by default.

What is a key challenge when working with JSON files?

Finding the right API to retrieve the JSON data.

The deeply nested structures within JSON files.

Converting JSON files to XML files.

Ensuring JSON files can be read by Python.

In what situation might you prefer using median value for imputing missing data over mean?

- ● When the data is heavily skewed or contains outliers.

- ○ When all missing values are in the same column.

- ○ When the dataset is small and missing few values.

- ○ When the missing values are all zeroes.