PYTHON BASIC QUESTIONS :

TOPIC : PYTHON

1. **What is Python?**

   Python is a high-level, interpreted, and general-purpose programming language known for its readability and support for multiple programming paradigms.

2. **What are the key features of Python?**

   Easy to read and write, interpreted, dynamically typed, supports multiple programming paradigms (procedural, object-oriented, functional), extensive standard library, and strong community support.

3. **What are the different data types in Python?**

   Common data types include integers, floats, strings, lists, tuples, sets, and dictionaries.

4. **What is a variable in Python ?**

   A variable is like a box that holds a value. You can give the box a name, and then you can use that name to get or change the value in the box.

   OR

   A variable is a named location used to store data in memory. It is created by assigning a value to a name.

5. **Benefits for using Python Language over any other language ?**

   - Easy to Read and Write:

Python's syntax is clear and straightforward, making it easy to learn and use.

   - Versatile:

Python can be used for web development, data analysis, machine learning, automation, and more.

   - Large Standard Library:

Python comes with a vast standard library that includes modules and packages for various tasks, reducing the need for external libraries.

   - Cross-Platform:

Python works on different operating systems, such as Windows, macOS, and Linux, without requiring changes to the code.

- Beginner-Friendly:

Python is often recommended as the first programming language for beginners due to its simplicity and readability.

- High-Level Language:

Python handles many complex details, such as memory management, so you can focus more on writing your code.

6. **What are Python's built-in functions?**
   Python has many built-in functions such as print(), len(), type(), int(), str(), sum(), min(), max(), and more, which provide commonly needed functionality.
7. **How do you write comments in Python?**
   Single-line comments start with the # symbol. Multi-line comments can be enclosed in triple quotes (“” or “””).

DATA TYPES IN PYTHON :
TOPIC : LIST

8. **What is a list in Python?**
   A list is an ordered collection of items that can be of different types. Lists are mutable.
9. **What does it mean for a list to be mutable?**
   - Mutable means “changeable.”
   - For a list, this means you can change it after you create it.
   - You can add, remove, or change items in the list.
10. **What are the methods that list contains ?**
    Methods help you do different things with your list, such as adding new items, removing items, or changing how the list looks. Each method has a specific job it can do to your list, and you use these methods by calling their names with your list.
    - append(x): Adds something new to the end of your list.
    - remove(x): Takes out the first thing in your list that matches what you tell it.
    - sort(): Puts all the items in your list in order from smallest to biggest, or in another way you choose.
    - index(x): Shows you where in the list the first item like x is.

- clear(): Removes all items from the list.
- count(x): Returns the number of times item x appears in the list.
- reverse():Reverses the elements of the list in place.
- copy():Returns a shallow copy of the list.
- pop(): removes and gives you back the last item in a list, or an item at a specific position if you tell it where.

11.What are the Functions that list contains ?

- len(list)

  Returns the number of items in the list.

- max(list)

  Returns the largest item in the list.

- min(list)

  Returns the smallest item in the list.

- sum(list)

  Returns the sum of all items in the list.

- sorted(list, key=None, reverse=False)

  Returns a new sorted list from the items in the list.

- list(iterable)

  Converts an iterable (like a tuple) into a list.

12. Can a list contain elements of different data types?

Yes, a list can contain elements of different data types, such as integers, strings, and other lists.

13.What is a nested list?

A nested list is a list that contains other lists as its elements.

14. What happens if you try to access an index that is out of range in a list?

Trying to access an index that is out of range will raise an IndexError.

15. How can you iterate over all the elements in a list?

You can iterate over all the elements using a for loop: for element in my_list

16. How do you check if an item is in a list?

You can check if an item is in a list using the in keyword: if item in my_list:

17. What is the difference between insert() and append() methods in a list?

insert() adds an element at a specific index, while append() adds an element to the end of the list.

18.Can lists be used as keys in dictionaries?

No, lists cannot be used as keys in dictionaries because they are mutable and not hashable.

19.How do you concatenate two lists in Python?

Two lists can be concatenated using the + operator

20.What is the difference between append() and extend() method in list ?

Append function in Python adds a single element to the end of the list, whereas the extend function adds multiple elements (from an iterable) to the list.

TOPIC : STRING

1. **What is a string in Python?**

   A string is a sequence of characters enclosed within single quotes (‘) or double quotes (“).

2. **How do you access characters in a string?**

   Characters in a string can be accessed using indexing.

3. **How do you find the length of a string?**

   You can find the length of a string using the len() function.

4. **How do you concatenate strings in Python?**

   Strings can be concatenated (combined) using the + operator.

5. **How do you check if a substring exists in a string?**
   You can use the in keyword to check if a substring exists in a string.

6. **How do you convert a string to uppercase or lowercase?**
   Use the upper() method for uppercase and lower() method for lowercase conversion.

7. **How do you replace characters in a string?**
   Use the replace() method to replace characters in a string.

8. **How do you join elements of a list into a single string?**
   Use the join() method on a separator string to concatenate elements of a list into a single string.

9. **How do you check if a string starts or ends with a specific substring?**
   Use startswith() and endswith() methods to check the beginning and end of a string.

10. **How do you strip whitespace from the beginning and end of a string?**
    Use the strip() method to remove leading and trailing whitespace.

11. **How do you count occurrences of a substring in a string?**
    Use the count() method to count occurrences of a substring.

12. **How do you check if all characters in a string are alphanumeric?**
    Use the isalnum() method to check if all characters are alphanumeric (letters or digits).
13. **How do you check if all characters in a string are digits?**
    Use the isdigit() method to check if all characters are digits.
14. **How do you check if all characters in a string are alphabetic?**
    Use the isalpha() method to check if all characters are alphabetic (letters).
15. **How do you check if a string is empty?**
    Use the len() function to check if the length of the string is 0.
16. **How do you reverse a string?**
    Use slicing [::-1] to reverse a string.
17. **How do you convert a string to title case?**

Use the title() method to convert the first character of each word to uppercase and the rest to lowercase.

18. How do you find the position of a substring within a string?

Use the find() method to find the first occurrence of a substring and return its index.

19. How do you check if a string contains only whitespace?

Use the isspace() method to check if a string contains only whitespace characters.

20. How do you check if a string is in lowercase or uppercase?

Use the islower() and isupper() methods to check if all characters are lowercase or uppercase, respectively.

21. How do you remove leading zeros from a string representing a number?

Use the lstrip() method to remove leading zeros.

TOPIC : TUPLE

1. **What is a tuple in Python?**

A tuple is a collection of ordered and immutable (unchangeable) elements, enclosed in parentheses ().

2. **How do you create a tuple in Python?**

You create a tuple by placing comma-separated values inside parentheses.

3. **What is the main difference between a tuple and a list?**

A tuple is immutable, meaning its elements cannot be changed after creation, while a list is mutable.

4. **Can a tuple contain different data types?**

Yes, a tuple can contain elements of different data types, similar to lists.

5. **How do you access elements in a tuple?**

Elements in a tuple are accessed using indexing.

6. **Can you add or remove elements from a tuple?**

No, tuples are immutable, so you cannot add or remove elements after creation.

7. **What is the purpose of using a tuple over a list?**

   Tuples are used when you want to store a fixed collection of items that should not be changed, providing data integrity.

8. **How do you check the length of a tuple?**

   Use the len() function to determine the number of elements in a tuple.

9. **How do you convert a tuple to a list?**

   Use the list() function to convert a tuple into a list.

10. **How do you convert a list to a tuple?**

    Use the tuple() function to convert a list into a tuple.

11. **What is tuple unpacking in Python?**

    Tuple unpacking allows you to assign each element of a tuple to separate variables.

12. **How do you check if an element exists in a tuple?**

    Use the in keyword to check for the existence of an element in a tuple.

13. **How do you iterate through elements of a tuple?**

    Use a for loop to iterate through each element of a tuple.

14. **Can a tuple be used as a dictionary key?**

    Yes, tuples can be used as dictionary keys because they are immutable and hashable.

15. **Can you nest tuples inside other tuples?**

    Yes, tuples can contain other tuples as elements, allowing for nested data structures.

TOPIC : DICTIONARY

1. **What is a dictionary in Python?**
   A dictionary is an unordered collection of key-value pairs, where each key is unique and associated with a value.

2. **How do you create a dictionary in Python?**
   You create a dictionary by enclosing key-value pairs inside curly braces {}.

3. **What are the characteristics of keys in a dictionary?**

   Keys must be unique and immutable (strings, numbers, or tuples are commonly used as keys).

4. **How do you access values in a dictionary?**

   Values in a dictionary are accessed using their corresponding keys inside square brackets [].

5. **Can a dictionary contain duplicate keys?**

   No, each key in a dictionary must be unique. If you assign a new value to an existing key, it updates the existing value.

6. **How do you add a new key-value pair to an existing dictionary?**

   You can add a new key-value pair by assigning a value to a new key.

7. **How do you remove a key-value pair from a dictionary?**

   Use the del keyword or the pop() method to remove a specific key-value pair from a dictionary.

8. **What is the purpose of using a dictionary over a list?**

   Dictionaries are used when you want to store data in key-value pairs for fast look-up and retrieval by key.

9. **How do you iterate through key-value pairs in a dictionary?**

   Use a for loop to iterate through each key-value pair in a dictionary.

10. **How do you get a list of all keys or values in a dictionary?**

    Use the keys() method to get a list of all keys or the values() method to get a list of all values in a dictionary.

11. **How do you clear all elements from a dictionary?**

    Use the clear() method to remove all key-value pairs from a dictionary.

12. **Can a dictionary value be a list?**

    Yes, dictionary values can be lists, tuples, dictionaries, or any other Python data type.

13. **Can dictionaries be nested inside other dictionaries?**

Yes, dictionaries can contain other dictionaries as values, allowing for nested data structures.

14. What is the difference between dictionaries and sets?

Dictionaries store data in key-value pairs, while sets store only unique elements without any specific order.

15. How do you check if two dictionaries have the same key-value pairs?

Use the == operator to check if two dictionaries have the same key-value pairs in the same order.

TOPIC : SET

1. **What is a set in Python?**

   A set is an unordered collection of unique elements, enclosed in curly braces {}.

2. **How do you create a set in Python?**

   You create a set by placing comma-separated values inside curly braces {}.

3. **Can a set contain duplicate elements?**

   No, sets only contain unique elements. If you add a duplicate element, it will be ignored.

4. **What are the characteristics of elements in a set?**

   Elements in a set must be immutable (like numbers, strings, or tuples).

5. **How do you convert a list to a set?**

   Use the set() function to convert a list into a set.

6. **How do you access elements in a set?**

   Sets are unordered, so you cannot access elements by index. You typically use a loop or check membership with in.

7. **How do you add elements to a set?**

   Use the add() method to add a single element to a set.

8. **How do you remove elements from a set?**

   Use the remove() method to remove a specific element from a set. If the element does not exist, it raises an error.

9. **How do you check if an element exists in a set?**

Use the in keyword to check for the existence of an element in a set.

10.How do you check if one set is a subset of another?

Use the issubset() method to check if one set is a subset of another.

11.How do you check if two sets are equal?

Use the == operator to check if two sets contain the same elements, regardless of order.

12.Can sets contain mutable elements like lists?

No, sets cannot contain mutable elements like lists because sets require elements to be immutable for hashing.

13.Can you nest sets inside other sets?

No, sets cannot contain other sets as elements because sets require elements to be immutable.

TOPIC : CONDITIONAL STATEMENT

1. **What are conditional statements in Python?**

Conditional statements are used to execute certain blocks of code based on whether a condition is True or False.

2. **What are the types of conditional statements in Python?**

Python has if, elif (else if), and else statements for conditional execution.

3. **How do you write an if statement in Python?**

An if statement checks a condition and executes a block of code if the condition is True.

4. **What happens if the condition in an if statement is False?**

If the condition is False, the block of code inside the if statement is skipped.

5. **How do you use else with an if statement?**

Use else to execute a block of code when the if condition is False.

6. **Can you have multiple conditions in a sequence?**

Yes, use elif (else if) to check additional conditions after an initial if statement.

7. **How do you combine multiple conditions in an if statement?**

Use logical operators (and, or, not) to combine multiple conditions in an if statement.

8. **What is the purpose of the elif statement?**

The elif statement allows you to check multiple conditions sequentially after an initial if statement. It executes if the previous conditions are False and its condition is True.

9. **How do you use nested if statements?**

You can place one if statement inside another to create nested conditions.

10. **How do you check if a value is in a list before processing it?**

Use an if statement with the in keyword to check membership in a list.

11. **How do you compare two variables for equality in a conditional statement?**

Use == to compare two variables for equality.

TOPIC : LOOPS

1. **What are loops in Python?**

Loops are used to repeatedly execute a block of code until a certain condition is met.

2. **What are the types of loops in Python?**

Python supports for loops and while loops.

3. **How do you write a for loop in Python?**

A for loop iterates over a sequence (like a list, tuple, or string).

4. **How do you write a while loop in Python?**

A while loop executes as long as a condition is True.

What happens if the condition in a while loop is False from the beginning?

The code inside the while loop is never executed.

5. **What is a break statement ?**

Break helps you stop a loop as soon as a condition is met. It exits the loop early.

Or

How do you terminate a loop early?

Use the break statement to exit the loop before it completes all iterations.

6. **What is a Continue statement ?**

continue helps you skip one iteration (cycle) of a loop when a condition is met, and then continue with the next iteration.

Or

How do you skip the current iteration of a loop?

Use the continue statement to skip the current iteration and continue with the next one.

7. **What is a Pass Statement ?**

pass doesn't do anything. It's like a placeholder when you need something there syntactically but don't want any action taken.

Or

For loops cannot be empty , but if you for some reasons have a for loop with no content, put it in the pass statement to avoid getting an error.

8. **What is the range function?**

range generates a sequence of numbers. It can take up to three arguments: start, stop, and step.

OR

How does range work in a for loop?

When used in a for loop, range generates numbers sequentially, starting from start (inclusive) up to stop (exclusive), with an optional step value that determines the increment between numbers.

OR

How do you iterate over a range of numbers using a for loop?

Use the range() function to generate a sequence of numbers.

9. **How do you handle situations where no conditions are met in a loop?**

   Use else with a for or while loop to handle scenarios where no iterations occurred.

TOPIC : MODULE AND PACKAGES

1. **What is a module in Python?**

A module is a file containing Python code, which can define functions, classes, and variables.

2. **How do you import a module in Python?**

You can import a module using the import statement.

3. **What is the purpose of the import statement in Python?**

The import statement allows you to use functions, classes, and variables defined in other modules in your code.

4. **How do you import a specific function from a module?**

You can import a specific function using the from keyword.

5. **What is a package in Python?**

A package is a collection of modules grouped together in a directory, which usually contains an __init__.py file.

6. **What is the purpose of the __init__.py file in a package?**

The __init__.py file makes Python treat the directory as a package. It can also execute initialization code for the package.

7. **What is the difference between a module and a package?**

A module is a single file containing Python code, while a package is a collection of modules organized in a directory.

8. **What is the math module used for?**

The math module provides mathematical functions, such as trigonometric functions, logarithms, and more.

9. **How do you list all available modules in Python?**

You can list all available modules using the help('modules') command in the Python interpreter.

10. **What is the random module used for?**

The random module provides functions for generating random numbers and performing random operations.

11. **What is the os module used for?**

The os module provides functions for interacting with the operating system, such as file and directory operations.

12. **What is the time module used for?**

The time module provides functions for working with time, such as sleeping, measuring time intervals, and more.

13. **What is the datetime module used for?**

The datetime module provides classes for manipulating dates and times.

14. **How do you document a module?**

You document a module by writing a docstring at the top of the module file

15. **What is the re module used for?**

The re module provides functions for working with regular expressions.

16. **What is a function in Python?**

A function is a block of reusable code that performs a specific task. It can take inputs, perform operations, and return a result.

17. **How do you define a function in Python?**

You define a function using the def keyword.

18. **How do you call a function in Python?**

You call a function by using its name followed by parentheses.

19. **What is the purpose of the return statement in a function?**

The return statement is used to exit a function and send a value back to the caller.

TOPIC : *ARGS AND **KWARGS

1. **What are *args and **kwargs in Python?**

They are ways to let a function take any number of arguments. *args is for many positional (normal) arguments, and **kwargs is for many keyword (name=value) arguments.

2. **What does *args do?**

*args allows you to pass many positional arguments to a function. These arguments are put into a tuple (a list that can't change).

3. **What does **kwargs do?**

**kwargs allows you to pass many keyword arguments to a function. These arguments are put into a dictionary (a collection of key-value pairs).

4. **Can you use *args and **kwargs together in a function?**

Yes, you can use both in the same function. *args comes first, then **kwargs.

5. **When should you use *args and **kwargs?**

Use *args when you don't know how many normal arguments will be passed. Use **kwargs when you don't know how many keyword arguments will be passed.

6. **What is the difference between *args and **kwargs?**

*args is for many normal arguments, collected in a tuple. **kwargs is for many keyword arguments, collected in a dictionary.

7. **What is the map() function in Python?**

map() applies a function to every item in a list (or another collection) and gives back a new list with the results.

8. **How do you use the map() function?**

You use map() by giving it two things: a function and a list. It runs the function on each item in the list.

9. Can you use map() with a quick function (lambda)?

Yes, you can use map() with a lambda function, which is a quick way to write a function.

10.What does map() return?

map() gives back a special map object. You need to turn it into a list to see the results.

11.Why use map() instead of a loop?

map() can make your code shorter and easier to read when you want to apply a function to every item in a list. It can also be faster sometimes.

12.What is a lambda function in Python?

A lambda function is a small, anonymous (unnamed) function defined using the lambda keyword. It can have any number of arguments but only one expression.

13.How do you create a lambda function?

You create a lambda function using the lambda keyword followed by arguments, a colon, and the expression.

14.Can lambda functions take multiple arguments?

Yes, lambda functions can take multiple arguments.

15.What is an exception in Python?

An exception is an error that occurs during the execution of a program.

16.What is exception handling?

Exception handling is the process of responding to exceptions by using special code to manage errors without stopping the program.

17.Why is exception handling important?

It helps prevent the program from crashing and allows you to manage errors gracefully.

18.What is the try block?

The try block is where you put the code that might cause an exception.

19.What is the except block?

The except block is where you put the code that runs if an exception happens.

20.What is the finally block?

The finally block is where you put the code that runs no matter what, even if there is an exception.

21.What is the else block?

The else block is where you put the code that runs if no exception happens.

22.Can you have multiple except blocks?

Yes, you can have multiple except blocks to handle different types of exceptions.

23.What is a specific exception?

A specific exception is an error type, like ZeroDivisionError or ValueError, that you can catch and handle.

24.What happens if no exception is raised in the try block?

If no exception is raised, the code in the else block runs (if there is one).

25.Can you use finally without except?

Yes, you can use finally with try without except.

26.Can you use try without except?

No, a try block must have at least one except or finally block.

27.Is it a good practice to catch all exceptions?

No, it's better to catch specific exceptions to avoid hiding bugs.

PYTHON LIBRARIES BASICS QUESTIONS :

NUMPY :

1. **What is NumPy?**

NumPy is a Python library used for working with arrays. It also has functions for mathematical, logical, and statistical operations.

2. **Why is NumPy useful?**

NumPy is useful because it can handle large amounts of data efficiently and has many built-in functions for mathematical operations.

3. **What is an array in NumPy?**

An array is a data structure that can hold more than one value at a time. NumPy arrays are called ndarray.

4. **What is the difference between a Python list and a NumPy array?**

NumPy arrays are faster and more efficient for numerical operations compared to Python lists. They also offer more functionality.

5. **What is the shape of an array?**

The shape of an array tells you the number of elements in each dimension of the array.

6. **How do you create an array of zeros?**

Use the np.zeros() function.

7. **How do you create an array of ones?**

Use the np.ones() function.

8. **How do you create an array with a range of numbers?**

Use the np.arange() function.

9. **How do you create an array with random numbers?**

Use the np.random.random() function.

10. **How do you add two arrays together?**

Use the np.add() function or the + operator.

11. **How do you find the maximum value in an array?**

Use the np.max() function.

12. **How do you find the minimum value in an array?**

Use the np.min() function.

13. **How do you find the sum of all elements in an array?**

Use the np.sum() function.

14. **How do you find the average of all elements in an array?**

Use the np.mean() function.

15. **How do you find the standard deviation of elements in an array?**

Use the np.std() function.

16. **How do you slice a NumPy array?**

Use the slicing method similar to Python lists.

17. **How do you concatenate two NumPy arrays?**

Use the np.concatenate() function.

18. **How do you save a NumPy array to a file?**

Use the np.save() function.

19. **How do you load a NumPy array from a file?**

Use the np.load() function.

20. **What is a multidimensional array in NumPy?**

A multidimensional array (or ndarray) is an array with more than one dimension, like a matrix or a table of data.

TOPIC : PANDAS

1. **What is Pandas in Python?**

Pandas is a tool in Python that helps you work with data easily, like handling tables of information.

2. **Why is Pandas preferred for data analysis in Python?**

- **Answer:** Pandas is preferred because it provides easy-to-use data structures and data analysis tools. It allows for fast data manipulation, cleaning, and analysis, supports data alignment and integrated handling of missing data, and has powerful grouping and aggregation capabilities.

3. **What is a Series in Pandas?**

A Series is like a list of items, but each item has a label. It's like one column in a spreadsheet.

4. **What is a DataFrame in Pandas?**

A DataFrame is like a table with rows and columns. It can have different types of data in each column, just like a spreadsheet.

5. **How do you get basic statistical details of a DataFrame?**

- **Answer:** You can get basic statistical details using the describe method

6. **How do you read a CSV file using Pandas?**

- **Answer:** You can read a CSV file using the read_csv function.

7. **How do you display the first few rows of a DataFrame?**

- **Answer:** You can use the head function to display the first few rows.

8. **How do you get the number of rows and columns in a DataFrame?**

- **Answer:** You can use the shape attribute.

9. **What is the difference between iloc and loc in Pandas?**

- **Answer:** iloc is used for integer-location based indexing for selection by position, while loc is used for label-based indexing for selection by label.

10. **What is the purpose of the groupby function in Pandas?**

- **Answer:** The groupby function is used to split the data into groups based on some criteria, apply a function to each group independently, and then combine the results

11. **How does Pandas handle missing data?**

12. **Answer:** Pandas provides several methods to handle missing data, such as isnull() to detect missing data, dropna() to remove missing data, and fillna() to fill missing data with a specified value.

13. **What is a pivot table in Pandas?**
    - **Answer:** A pivot table in Pandas is a data summarization tool that can automatically sort, group, and aggregate the data. It is created using the pivot_table function and is useful for creating summary tables.

TOPIC : MATPLOTLIB

1. **What is Matplotlib?**

- **Answer:** Matplotlib is a Python library used for creating static, interactive, and animated visualizations in Python.

2. **What is the purpose of the pyplot module in Matplotlib?**

- **Answer:** The pyplot module provides a MATLAB-like interface for creating plots and charts easily.

3. **How do you create a simple line plot?**

- **Answer:** You can create a simple line plot using the plot function

4. **What does the show function do in Matplotlib?**

- **Answer:** The show function displays the plot on the screen.

5. **How do you add a title to a plot?**

- **Answer:** You can add a title using the title function.

6. **How do you label the x-axis and y-axis?**

- **Answer:** You can label the x-axis using xlabel and the y-axis using ylabel

7. **How do you create a scatter plot?**

- **Answer:** You can create a scatter plot using the scatter function.

8. **How do you add a legend to a plot?**

- **Answer:** You can add a legend using the legend function.

9. **What is a subplot?**

- **Answer:** A subplot is a plot within a larger figure, allowing you to display multiple plots in a single figure.

10. **How do you save a plot as an image file?**

- **Answer:** You can save a plot using the savefig function.

11. **How do you fill an area between two curves in a plot?**

- **Answer:** You can fill the area using the fill_between function

12. **How do you create a horizontal bar chart?**

- **Answer:** You can create a horizontal bar chart using the barh

TOPIC : SEABORN

1. **What is Seaborn?**

- **Answer:** Seaborn is a Python data visualization library based on Matplotlib that provides a high-level interface for drawing attractive and informative statistical graphics.

2. **What is the primary purpose of Seaborn?**

- **Answer:** The primary purpose of Seaborn is to make it easier to create visually appealing and informative statistical plots.

3. **What are some common plot types you can create with Seaborn?**

- **Answer:** Some common plot types include scatter plots, line plots, bar plots, histograms, box plots, and heatmaps.

4. **How do you create a simple scatter plot with Seaborn?**

- **Answer:** You can create a scatter plot using the scatterplot function.

5. **How do you create a simple line plot with Seaborn?**

- **Answer:** You can create a line plot using the lineplot function

6. **How do you create a simple bar plot with Seaborn?**

- **Answer:** You can create a bar plot using the barplot function

7. **How do you create a histogram with Seaborn?**

- **Answer:** You can create a histogram using the histplot function.

8. **How do you create a box plot with Seaborn?**

- **Answer:** You can create a box plot using the boxplot function

9. **What is the purpose of the pairplot function in Seaborn?**

- **Answer:** The pairplot function is used to create a matrix of scatter plots for pairwise relationships in a dataset.

10. **How do you customize the color palette in Seaborn?**

- **Answer:** You can customize the color palette using the set_palette

11. **What is the purpose of the distplot function in Seaborn?**

- **Answer:** The distplot function (deprecated, use histplot or displot instead) was used to plot univariate distributions.

12. **How do you save a Seaborn plot as an image file?**

- **Answer:** You can save a Seaborn plot using the plt.savefig function from Matplotlib

13. **What is the purpose of the facetgrid function in Seaborn?**

- **Answer:** The FacetGrid function is used to create multiple plots based on the values of a categorical variable.

14. **What is the purpose of the lmplot function in Seaborn?**

- **Answer:** The lmplot function is used to create linear regression models for scatter plots.

15. **What is the purpose of the stripplot function in Seaborn?**

- **Answer:** The stripplot function is used to create scatter plots where one of the variables is categorical.

16. **What is the purpose of the heatmap function in Seaborn?**

- **Answer:** The heatmap function is used to create a heatmap, which is a graphical representation of data where individual values are represented by colors.

TOPIC : STAT MODULE

1. **What is the statistics module in Python?**

- **Answer:** The statistics module provides functions for calculating mathematical statistics of numeric data.

2. **What function is used to calculate the mean of a list of numbers?**

- **Answer:** The mean function is used to calculate the average of a list of numbers

3. **What function is used to calculate the median of a list of numbers?**

- **Answer:** The median function is used to find the middle value in a list of numbers.

4. **What function is used to calculate the mode of a list of numbers?**

- **Answer:** The mode function is used to find the most frequent value in a list of numbers.

OR

5. **What function would you use to find the central tendency of categorical data?**

- **Answer:** The mode function is used to find the most frequent value in categorical data.

6. **What is the pstdev function used for?**

- **Answer:** The pstdev function is used to calculate the population standard deviation of a list of numbers.

7. **What is the stdev function used for?**

- **Answer:** The stdev function is used to calculate the sample standard deviation of a list of numbers.

8. **What is the pvariance function used for?**

- **Answer:** The pvariance function is used to calculate the population variance of a list of numbers.

9. **What is the variance function used for?**

- **Answer:** The variance function is used to calculate the sample variance of a list of numbers.

10. **What is the median_low function used for?**

- **Answer:** The median_low function is used to calculate the lower median of a list of numbers.

11. **What is the median_high function used for?**

- **Answer:** The median_high function is used to calculate the higher median of a list of numbers.

12. **What is the median_grouped function used for?**

- **Answer:** The median_grouped function is used to calculate the median of grouped continuous data.

13. **What is the quantiles function used for?**

- **Answer:** The quantiles function is used to divide data into intervals with equal probabilities.

14. **What function would you use to measure the spread of a dataset?**

- **Answer:** The variance and stdev functions measure the spread of a dataset.

15. **How do you handle an empty list with the mean function?**

- **Answer:** If you pass an empty list to the mean function, it will raise a StatisticsError.

16. **What is the mean function's return type?**

- **Answer:** The mean function returns a float value.