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- What is an algorithm?
 - B) A step-by-step procedure for solving a problem
- What is a flowchart used for?
 - B) Representing algorithms visually
- Which symbol represents a decision in a flowchart?
 - C) Diamond
- Define the term 'compilation':
 - B) Translating code into machine language
- What is debugging?
 - B) Testing and finding errors in a program
- What does 'documentation' refer to in programming?
 - C) Writing comments and manuals for code
- What is a programming language?
 - B) A language for writing software
- What is the basic model of computation?
 - C) Input process and output
- What is the primary purpose of an algorithm?
 - B) To solve a problem step-by-step

- What is sequential processing in algorithms?
 - B) Steps that are executed one after another
- How is a process represented in a flowchart?
 - B) Rectangle
- What does iterative processing involve?
 - C) Repeating steps
- Which of the following is an example of decision-based processing?
 - C) Checking if a number is even or odd
- What is the first step in exchanging values of two variables?
 - C) Use a temporary variable
- What does GCD stand for?
 - A) Greatest Common Divisor
- How can you check if a number is prime in an algorithm?
 - B) Check divisibility by numbers up to its square root
- What makes Python popular?
 - A) Easy to read and write
- What is the role of the Python interpreter?
 - B) To execute Python programs
- How do you execute a Python program?
 - B) Using the Python interpreter
- How are comments written in Python?

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- C) # comment
- What are literals in Python?
 - B) Data that is constant
- Which of the following is a constant in Python?
 - B) 3.14
- Which built-in data type is NOT supported by Python?
 - D) Character
- How do you accept input from the console in Python?
 - B) input()
- Which function is used to print statements in Python?
 - C) print()
- What does the following Python program do?

```
a = 5
b = 10
print(a + b)
```

- C) Adds two numbers and prints 15
- What is an assignment statement in Python?
 - B) a = b
- Which of the following is an arithmetic operator?
 - B) %
- What is the correct order of precedence for operators in Python?
 - B) Parentheses Multiplication Addition

- Which statement is used for conditional execution?
 - C) if
- What will the following code print?

```
if 5 > 3:
    print("Yes")
else:
    print("No")
```

- A) Yes
- What does the 'elif' keyword do?
 - C) Adds an additional condition
- Which loop is used for iterating over a sequence?
 - B) for
- What does the 'break' statement do?
 - B) Ends the loop immediately
- What is the purpose of the 'continue' statement?
 - B) Continues to the next iteration
- What does the 'pass' statement do?
 - C) Does nothing
- Which statement is used for an infinite loop?
 - B) while
- What does the 'assert' statement do?
 - C) Tests a condition
- Which of the following is a mutable data type?
 - C) List

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- Which of the following is an immutable data type?
 - D) Tuple
- How do you slice a list in Python?
 - D) All of the above
- What does indexing a string mean?
 - C) Accessing characters in the string
- How do you concatenate two tuples?
 - A) Using the + operator
- What does mutability mean?
 - A) The ability to change
- Which function is used to find the maximum value in a list?
 - A) max()
- How do you perform a linear search on a list?
 - A) Using a loop to iterate through the list
- What is a dictionary in Python?
 - B) A collection of unordered changeable and indexed items
- How do you count the frequency of elements in a list using a dictionary?
 - A) By creating a dictionary where keys are list elements and values are counts
- What is a function in Python?
 - B) A block of code that performs a specific task
- How do you define a function in Python?

- B) using the def keyword
- What is a function parameter?
 - C) An argument passed to the function
- What is the use of the 'return' statement in a function?
 - C) To return a value from the function
- What is a local variable?
 - B) A variable defined inside a function
- What does the 'global' keyword do?
 - B) Declares a variable as global
- What are default argument values in Python?
 - A) Arguments that have default values if not provided
- How do you pass keyword arguments to a function?
 - B) By using the ** symbol
- What are VarArgs parameters?
 - C) Parameters that accept a variable number of arguments
- How do you write a recursive function?
 - A) A function that calls itself
- Which of the following is a built-in function in Python?
 - D) All of the above
- How do you find the length of a string in Python?
 - A) len()
- What does the random() function do?

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- A) Generates a random number
- How do you find the square root of a number in Python?
 - A) Using the sqrt() function from the math module
- What does the partition() method do in a string?
 - A) Splits the string into three parts
- What does the join() method do in a string?
 - A) Joins elements of a sequence into a single string
- What is a file in Python?
 - A) A collection of data stored in one unit
- How do you open a file in Python?
 - A) open(filename, mode)
- Which mode is used to open a file for reading?
 - A) 'r'
- Which mode is used to open a file for writing?
 - B) 'w'
- How do you read the entire content of a file?
 - A) read()
- What does the 'writelines()' method do?
 - A) Writes a list of strings to the file

- What does the 'tell()' method do in file handling?
 - A) Returns the current file position
- What does the 'seek()' method do in file handling?
 - A) Changes the file position
- What are command line arguments?
 - A) Arguments passed to the script at the time of execution
- What is the LEGB rule?
 - A) A rule for variable scope in Python
- What is a module in Python?
 - A) A file containing Python definitions and statements
- How do you import a module in Python?
 - A) import module name
- How do you create a module in Python?
 - A) By creating a .py file with functions and variables
- What is the scope of a variable defined inside a function?
 - A) Local scope
- What is NumPy?
 - A) A library for numerical computations in Python
- How do you create an ndarray in NumPv?
 - A) Using the array() function