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FUNCTION

Basic Java Course

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INTRODUCTION

In Java, a function is a block of code that performs a specific task. Functions are defined within a class and are commonly referred to as methods.

Benefits

- ***Code Reusability***: Functions allow you to write code once and reuse it multiple times.
- ***Modularity***: Breaking down tasks into functions makes code more modular and easier to maintain.
- ***Abstraction***: functions hide the implementation details of a task, making the code more readable and easier to understand.

INTRODUCTION

SYNTAX access_modifier return_type method_name(parameter_list) {}

- Access Modifier: Defines the visibility of the method. It can be public, private, protected, or package-private (no explicit modifier).
- Return Type: Specifies the type of value that the method returns. Use void if the method does not return any value.
- Method Name: The identifier for the method.
- Parameter List: Specifies the type and order of parameters (if any) that the function accepts. Parameters are optional.

MAIN FUNTION

- The main function is the entry point of a Java application. It's the function where the program starts execution.
- It must be declared as **public static void main(String[] args).**
- The main function is used to run the Java application. It acts as the starting point for any standalone application.
- You define the main function in a class and include the code you want to execute when the program runs.

SYNTAX

```
public static void main(String args[])
```

VOID FUNCTIONS

- Void functions perform actions but do not return any value. They are declared with the keyword void.
- Void functions are used to execute code that performs a task but does not need to return any result, such as printing messages, updating variables, or performing operations.
- You define a void function by specifying the keyword void in place of a return type.

RETURN FUNCTIONS

- Return functions perform tasks and return a value.
- They must specify a return type (e.g., int, double, String, etc.) and use the return keyword to return a value.
- Return functions are used when you need to perform calculations or operations and return a result to the caller.
- This allows you to use the result in further computations or logic.
- You define a return function by specifying the return type and using the return keyword to return a value.

PARAMETERIZED FUNCTIONS

- Parameterized functions accept input values (parameters) that influence their behavior. Parameters are specified in the function declaration within parentheses.
- Parameterized functions are used to pass data to functions, allowing them to perform tasks with varying inputs. This makes functions more flexible and reusable.
- You define a parameterized function by specifying the parameters in the parentheses.

OVERLOADED FUNCTIONS

- Function overloading allows multiple functions with the same name but different parameters (different type, number, or both) to exist within the same class. The appropriate function is selected based on the arguments passed.
- Overloaded functions are used to perform similar actions with different types or numbers of inputs. This makes it easier to handle various types of data without changing the function name.
- You define multiple functions with the same name but different parameter lists.

END