CLASSES

AN INTRODUCTION TO OBJECT ORIENTED PROGRAMMING (OOP)

WHAT IS A CLASS ?

- A class is a blueprint or template for creating objects in object-oriented programming.
- It defines the properties (data/variables) and methods (functions/behaviors) that its objects will have.
- Instead of writing the same code many times, a programmer can define a class once and then create multiple objects (instances) from it.
- This makes code more organized, reusable, and easier to maintain.

SYNTAX EXAMPLE OF A CLASS

- JavaScript Example:
- class Car {
- constructor(brand, model) {
- this.brand = brand;
- this.model = model;
- } }
- Here, Car is the name of the class.
- The constructor method is special: it runs automatically when a new object is created.
- The variables brand and model are the attributes of the Car class.

METHODS IN A CLASS

```
class Car {
  constructor(brand) {
    this.brand = brand; }
  drive() {
    return `${this.brand} is driving…`;
  } }
```

- A method is a function that belongs to a class.
- In this example, drive() is a method that returns a message.
- By grouping data (like brand) and actions (like drive) together, classes model real-world objects more clearly.
- This helps programmers follow the principle of encapsulation (bundling related code together).

INHERITANCE IN CLASSES

- class ElectricCar extends Car {
- constructor(brand, battery) {
- super(brand);
- this.battery = battery;
- } }
- Inheritance means a class can reuse and extend the properties and methods of another class.
- The extends keyword allows one class to “inherit” from another.
- The super() function calls the parent class’s constructor.
- This reduces code repetition and creates a clear hierarchy of classes (e.g., Car → ElectricCar).
- Conclusion: Classes are the foundation of OOP, helping developers create well-structured, reusable, and scalable programs.

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