**[NOTES] Summary of OOP basics**

**Class**is a template or design for objects. It defines what **properties** (attributes) and **methods**(functions) *objects*of this class will have.

You can think of a class like a building plan for a house. It is just a design, not an actual house.

An **Object**is a specific instance of a class. It is a real, concrete item that has been created based on the class. You can think of an object like a real house, built according to the plan.

**Properties** (attributes) are a description of the object. They define the characteristics that the object will have. For example, for the class "Monitor", properties might include **color, size, resolution**.

**Methods** (class functions) are actions or behaviors that the object can perform. They are like **instructions**, what the object can do. For example, for the class "Monitor", functions might include **turning on the monitor, changing brightness, turning off the monitor**.

And even more briefly:

A Class is a plan.

An Object is a **real item** created based on the plan.

**Properties** are the characteristics of the object.

**Functions** are the actions that the object can perform.

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ANOTHER take (to hit your brain from different perspective) in game world:

**Class**: Enemy

* A class is like a blueprint for creating enemies in a game. It defines what characteristics and actions every enemy will have.

**Object**: Specific Enemy

* An object is a specific instance of the enemy class. It's like creating a particular enemy in the game using the blueprint.

**Properties**: Attributes of the Enemy

* **Health**: How much damage an enemy can take before it dies.
* **Speed**: How fast the enemy moves.
* **Damage**: How much damage the enemy deals to the player.

**Methods**: Actions the Enemy Can Perform

* **Attack()**: The enemy attacks the player.
* **Move()**: The enemy moves towards the player.
* **TakeDamage()**: The enemy takes damage when hit by the player.

In Simple Terms:

* **Class**: Think of it as a recipe for a cake. It tells you what ingredients and steps are needed.
* **Object**: The actual cake you bake following the recipe.
* **Properties**: The characteristics of the cake, like flavor, size, and color.
* **Methods**: The actions you take to make the cake, like mixing, baking, and decorating.

So, in our game example:

* The **Enemy class** is the recipe.
* A **specific enemy** like a "Goblin" or "Orc" is the cake you bake.
* The **health, speed, and damage** are the cake's flavor, size, and color.
* The **attack, move, and take damage** are the steps to mix, bake, and decorate the cake.