Computer Science

Object-Oriented Programming (OOP) Concepts

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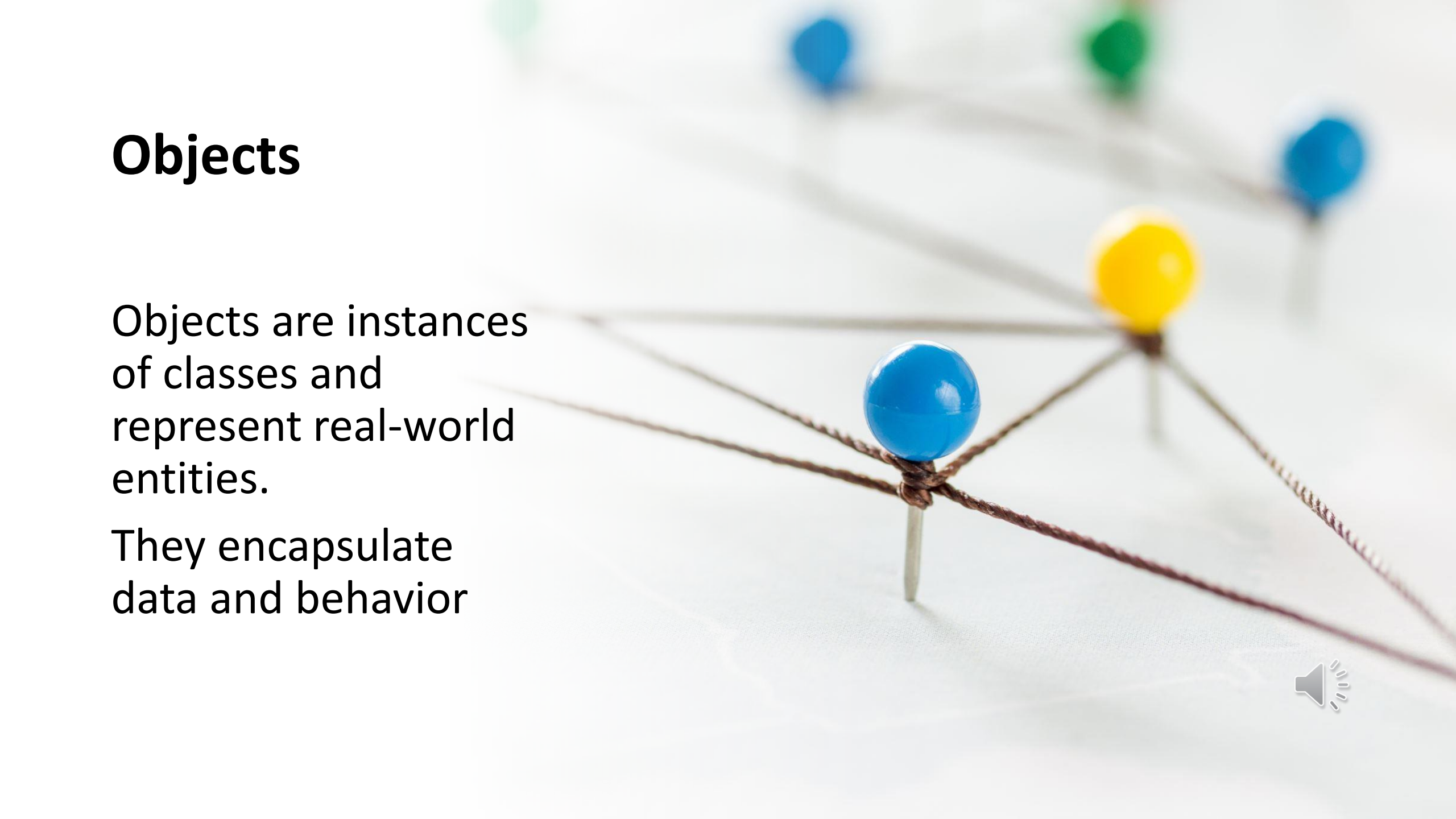
Objects

Objects are instances of classes and represent real-world entities.

They encapsulate data and behavior



Classes

Classes are blueprints or templates for creating objects.

They define the properties (attributes) and behaviors (methods) that objects of the class will have

Inheritance

Inheritance allows a class (subclass or derived class) to inherit the properties and behaviors of another class (superclass or base class). It supports code reuse and establishes an "is-a" relationship

Polymorphism

Polymorphism enables objects to take on multiple forms. It allows a single interface (method or operator) to be used for different data types or objects, enhancing flexibility and extensibility.

Encapsulation

Encapsulation involves bundling the data (attributes) and methods that operate on the data within a single unit (class).

It restricts access to certain components, promoting information hiding.

Abstraction

Abstraction involves simplifying complex systems by modeling classes based on essential properties and behaviors. It focuses on what an object does rather than how it achieves its functionality.

Covered Points:

- Objects
- Classes
- Inheritance
- Polymorphism
- Encapsulation
- Abstraction