

### 1. Office Supplies (Pens & Pencils)

- A **stationery store** sells different types of **pens and pencils**. Each **pen** has a **brand, color, and ink type**, while each **pencil** has a **hardness level (HB, 2B, etc.)** and an **eraser (Yes/No)**.
- **What would be the class, objects, properties, and methods**
- **Class:** pen,pencil
- **Properties:**
  - color
  - inktype
  - hardness level
- **Method:**
  - write() → Simulates writing with the pen.
- **Objects:**
  - Pen1
  - Pencil1

### 2. Library System

- A **library** has thousands of **books**. Each **book** has a **title, author, and genre**. The library allows users to **borrow and return books**.
- **Define the class, objects, properties, and methods for this scenario.**
- **Class:** book
- **Properties:**

Title

Author

genre

- **Method:**

Borrow()

Return()

- **Objects:**

Book1

Book2

### 3. Car Showroom

- A **car showroom** has different **brands of cars**. Each **car** has a **model name, color, fuel type, and price**. Customers can **purchase a car**.

- **What would be the class, objects, properties, and methods?**

- **Class:** Car
- **Properties:**

Model name

color

fuel type

price

- **Method:**

Purchase()

- **Objects:**

car1

car2

#### 4. Online Food Ordering System

- A **restaurant** has an online menu with **different food items**. Each **food item** has a **name, price, and category (veg/non-veg)**. Users can **place an order**.
- **How would you represent this using classes and objects?**
- **Class:** fooditem
- **Properties:**

Name

Price

category

- **Method:**

Order()

- **Objects:**

Food item1

Food item2

## 5. Mobile Phone Shop

- A **mobile shop** sells **smartphones**. Each **phone** has a **brand, model, RAM, and price**. Customers can **buy a phone** and **check phone details**.
- **Define the class, objects, and methods.**
- **Class:** phone
- **Properties:**

brand

model

RAM

price

- **Method:**

Buy()

check()

- **Objects:**

Phone1

## 6. Movie Ticket Booking System

- A **movie theatre** allows users to book **movie tickets**. Each **movie** has a **name, duration, and language**. Users can **book, cancel, or check available seats**.

**Class:** movie

**Properties:**

name

duration

language

**Method:**

Book()

Cancel()

Check()

**Objects:**

Movie1

Movie2

## 7. Hospital Management System

- A **hospital** has multiple **doctors** and **patients**. Each **doctor** has a **name, specialization, and years of experience**, while each **patient** has a **name, age, and disease**.
- **What are the classes, objects, and methods?**
- **Class:** doctor,patient
- **Properties:**
  - name
  - specialization
  - experience
- name
- age
- disease
- **Method:**
  - Prescribe()
  - Treat()
  - Educate()
- **Objects:**
  - Doctor1,doctor2
  - Patient1

## 8. E-Commerce Website

- An **e-commerce website** has multiple **products**. Each **product** has a **name, price, brand, and category**. Users can **add items to cart and purchase them**.
- **Identify the classes, objects, properties, and methods.**
- **Class:** product
- **Properties:**
  - name
  - price
  - brand
  - category
- **Method:**
  - Add item()
  - Purchase()

- **Objects:**
- Product1
- product2

## 9. Banking System

- A **bank** manages multiple **customer accounts**. Each **account** has an **account number, balance, and account type**. Customers can **deposit, withdraw, and check balance**.
- **Class:** saccount
- **Properties:**
- number
- balance
- account type
- **Method:**
- Deposit()
- Withdraw()
- Check balance()
- **Objects:**
- Account1
- Account2

## 10. Student Management System

- A **school** manages **students**. Each **student** has a **name, roll number, grade, and subjects**. Students can **enroll in courses and check their marks**.
- **Class:** student
- **Properties:**
- name
- roll number
- grade
- subjects
- **Method:**
- Enroll()
- checkMarks()
- **Objects:**
- Student1
- student2

## 11. Taxi Booking App

- A **taxi booking app** allows users to **book a ride**. Each **car** has a **driver name, car model, and availability status**.
- **Class:** car
- **Properties:**
- Driver name
- Car model
- availability
- **Method:**
- Book()

- Check status()
- **Objects:**
- Car1
- car2

## 12. Gaming System

- A **video game** has **players**. Each **player** has a **name, level, and score**. Players can **earn points and level up**.
- **Class:** player
- **Properties:**
- name
- level
- score
- **Method:**
- Earn()
- Levelup()
- **Objects:**
- Player1
- Player2

## 13. Hotel Management System

- A **hotel** has multiple **rooms**. Each **room** has a **room number, type (Single/Deluxe), and price per night**. Customers can **book, check-in, and check-out**.
- **Class:** room
- **Properties:**
- number
- type
- price
- **Method:**
- Book()
- Check-in()
- Check-out()
- **Objects:**
- Room1
- Room2

## 14. Weather Forecast System

- A **weather app** provides weather updates. Each **location** has a **temperature, humidity, and forecast**. Users can **check the weather of a specific location**.
- **Class:** location
- **Properties:**
- temperature
- humidity
- forecast

- **Method:**
- Check()
- **Objects:**
- Location1
- Location2

## 15. Smart Home Automation

- A **smart home** has multiple **devices** like **lights, fans, and ACs**. Each device has a **status (On/Off) and power consumption**.
- **Class:**device
- **Properties:**
- status
- power consumption
- **Method:**
- Check status()
- **Objects:**
- Device1
- Device2

## 16. Social Media Platform

- A **social media app** has multiple **users**. Each **user** has a **name, email, and list of friends**. Users can **send messages, post updates, and like posts**.
- **Class:**user
- **Properties:**
- name
- email
- list of friends
- **Method:**
- Send message()
- Post()
- Like()
- **Objects:**
- User1
- User2

## 17. Flight Booking System

- An **airline** allows customers to **book flights**. Each **flight** has a **flight number, destination, and seat availability**.
- **Class:**flight
- **Properties:**
- number
- destination

- seat availability
- **Method:**
- Travel()
- 
- **Objects:**
- Flight1
- Flight2

## 18. Music Player App

- A **music player** has multiple **songs**. Each **song** has a **title, artist, and duration**. Users can **play, pause, and skip** songs.
- **Class:**device
- **Properties:**
- title
- artist
- duration
- **Method:**
- Play()
- Pause()
- Skip()
- **Objects:**
- Song1

## 19. Supermarket Billing System

- A **supermarket** has multiple **products**. Each **product** has a **name, price, and stock quantity**. Customers can **buy products and receive a bill**.
- **Class:**device
- **Properties:**
- Name
- price
- stock quantity
- **Method:**
- Buy()
- Receive()
- **Objects:**
- Product1

## 20. Online Learning Platform

- An **e-learning platform** offers **courses**. Each **course** has a **title, instructor, and duration**. Students can **enroll and complete** courses.
- **Class:**course
- **Properties:**
- title
- instructor
- duration
- **Method:**
- Enroll()



- Complete()
- **Objects:**
- Course1
- Course2