**Exercise 3: Implementing the Builder Pattern**

**Scenario:**

You are developing a system to create complex objects such as a Computer with multiple optional parts. Use the Builder Pattern to manage the construction process.

**Main.java**

public class Main {

    public static void main(String[] args) {

        Computer gamingPC = new Computer.Builder("Intel i9", "32GB")

                .setStorage("1TB SSD")

                .setGraphicsCard("NVIDIA RTX 4090")

                .setOperatingSystem("Windows 11 Pro")

                .build();

        Computer officePC = new Computer.Builder("Intel i5", "8GB")

                .setStorage("512GB SSD")

                .setOperatingSystem("Windows 10")

                .build();

        Computer basicPC = new Computer.Builder("Intel i3", "4GB").build();

        System.out.println(gamingPC);

        System.out.println("\n---------------------------\n");

        System.out.println(officePC);

        System.out.println("\n---------------------------\n");

        System.out.println(basicPC);

    }

}

**Computer.java**

public class Computer {

    private final String CPU;

    private final String RAM;

    private final String storage;

    private final String graphicsCard;

    private final String operatingSystem;

    private Computer(Builder builder) {

        this.CPU = builder.CPU;

        this.RAM = builder.RAM;

        this.storage = builder.storage;

        this.graphicsCard = builder.graphicsCard;

        this.operatingSystem = builder.operatingSystem;

    }

    public String getCPU() { return CPU; }

    public String getRAM() { return RAM; }

    public String getStorage() { return storage; }

    public String getGraphicsCard() { return graphicsCard; }

    public String getOperatingSystem() { return operatingSystem; }

    @Override

    public String toString() {

        return "Computer Configuration:\n" +

                "CPU = " + CPU + "\n" +

                "RAM = " + RAM + "\n" +

                "Storage = " + storage + "\n" +

                "Graphics Card = " + graphicsCard + "\n" +

                "Operating System = " + operatingSystem;

    }

    public static class Builder {

        private final String CPU;

        private final String RAM;

        private String storage;

        private String graphicsCard;

        private String operatingSystem;

        public Builder(String CPU, String RAM) {

            this.CPU = CPU;

            this.RAM = RAM;

        }

        public Builder setStorage(String storage) {

            this.storage = storage;

            return this;

        }

        public Builder setGraphicsCard(String graphicsCard) {

            this.graphicsCard = graphicsCard;

            return this;

        }

        public Builder setOperatingSystem(String operatingSystem) {

            this.operatingSystem = operatingSystem;

            return this;

        }

        public Computer build() {

            return new Computer(this);

        }

    }

}

**Output :-**

