// Main.java

import java.util.Scanner;

import java.util.ArrayList;

public class Main {

    private static Scanner sc = new Scanner(System.in);

    private static ArrayList<Electronics> electronicProducts = new ArrayList<>();

    public static void main(String[] args) {

        while(true) {

            System.out.println("1) Display all electronics");

            System.out.println("2) Add TV");

            System.out.println("3) Add Computer");

            System.out.println("4) Update electronics");

            System.out.println("5) Delete electronics");

            System.out.println("6) Quit");

            int userChoice = sc.nextInt();

            if (userChoice == 1) {

                displayAllElectronics();

            }else if (userChoice == 2) {

                addTv();

            }else if (userChoice == 3) {

                addComputer();

            }else if (userChoice == 4) {

                updateElectronic();

            }else if (userChoice == 5) {

                deleteElectronic();

            }else if (userChoice == 6) {

                break;

            }else {

             System.out.println("You have entered an invalid option. Please try again!");

            }

        }

        private static void addTv() {

           Electronics p;

            System.out.println("Enter the brand");

            String brand = sc.nextLine();

            sc.nextLine();

            System.out.println("Enter the model");

            String model = sc.nextLine();

            sc.nextLine();

            System.out.println("Enter the price");

            double price = sc.nextDouble();

            sc.nextLine();

            System.out.println("Enter the power");

            double power = sc.nextDouble();

            sc.nextLine();

            System.out.println("Enter the screen size");

            int screensize = sc.nextInt();

            p = new Tv(brand, model, price, power, screensize);

            electronicProducts.add(p);

        }

        private static void addComputer() {

            Electronics p;

             System.out.println("Enter the brand");

             String brand = sc.nextLine();

             sc.nextLine();

             System.out.println("Enter the model");

             String model = sc.nextLine();

             sc.nextLine();

             System.out.println("Enter the price");

             double price = sc.nextDouble();

             sc.nextLine();

             System.out.println("Enter the power");

             double power = sc.nextDouble();

             sc.nextLine();

             System.out.println("Enter the CPU");

             double cpu = sc.nextLine();

             sc.nextLine();

             System.out.println("Enter the RAM");

             double ram = sc.nextDouble();

             sc.nextLine();

             System.out.println("Enter the SSD");

             double ssd = sc.nextDouble();

             p = new vacuumCleaner(brand, model, price, power, cpu, ram, ssd);

             electronicProducts.add(p);

        }

        private static void displayAllElectronics() {

            for(int i = 0; i < electronicProducts.size(); i++) {

                Electronics e = electronicProducts.get(i);

                System.out.println("Index of product is " + i);

                e.display();

            }

        }

        private static void updateElectronic() {

            displayAllElectronics();

            System.out.println("Key in the index of the electronic product you want to UPDATE");

            electronicProductIndex = sc.nextInt();

            sc.nextLine();

            Electronics e = electronicProducts.get(i);

            e.editElectronic(sc);

        }

        private static void deleteElectronic() {

            displayAllElectronics();

            System.out.println("Key in the index of the elctronic product you want to DELETE");

            electronicProductIndex = sc.nextInt();

            sc.nextLine();

            electronicProducts.remove(electronicProductIndex);

            displayAllElectronics(sc);

        }

    }

}

// Electronics.java

import java.util.Scanner;

class Electronics {

    private static int count;

    protected String brand;

    protected String model;

    protected double price;

    protected double price;

    public Electronics() {

        this.brand = "N/A";

        this.model = "N/A";

        this.price = 0;

    }

    public Electronics(String brand, String model, double price) {

        this.brand = brand;

        this.model = model;

        this.price = price;

    }

    public String getbrand() {

        return brand;

    }

    public void setBrand(String brand) {

        this.brand = brand;

    }

    public String getModel() {

        return model;

    }

    public void setModel(String model) {

        this.model = model;

    }

    public double price() {

        return price;

    }

    public void setPrice(double price) {

        this.price = price;

    }

    public void display() {

    System.out.println("Brand: " + brand + "" + "Model: " + model + "" + "Price: " + price);

    }

    public void edit(Scanner sc) {

        System.out.println("Enter the new brand or press [ENTER] to remain unchanged");

        String brand = sc.nextLine();

        setBrand( brand.length() > 0 ? brand : this.brand);

        System.out.println("Enter the new model or press [ENTER] to skip");

        String model = sc.nextLine();

        setModel( model.length() > 0 ? model : this.model);

        System.out.println("Enter the new price or press [ENTER] to skip");

        String price = sc.nextDouble();

        setPrice(price.length() > 0 ? Double.parseDouble(price) : this.price);

    }

    public abstract double calculateSalesTax();

    public double getSalesTax() {

        return calculateSalesTax();

    }

}

// Computer.java

import java.util.Scanner;

class computer extends Electronics {

    private String cpu;

    private double ram;

    private double ssd;

    public Computer() {

        super();

        this.cpu = "N/A";

        this.ram = 0;

        this.ssd = 0;

    }

    public computer(String brand, String model, double price, double power, String cpu, double ram, double ssd) {

        super(brand, model, price, power);

        this.cpu = cpu;

        this.ram = ram;

        this.ssd = ssd;

    }

    public String getCpu() {

        return cpu;

    }

    public void setCpu(String cpu) {

        this.cpu = cpu;

    }

    public double getRam() {

        return ram;

    }

    public void setRam(double ram) {

        this.ram = ram;

    }

    public double getSsd() {

        return ssd;

    }

    public void setSsd(double ssd) {

        this.ssd = ssd;

    }

    public void display() {

        super.display();

        System.out.println("CPU: " + cpu + "" + "RAM: " + ram + "" + "SSD: " + ssd);

    }

    public void edit(Scanner sc) {

        super.edit(sc);

        System.out.println(("Enter the new cpu or press ENTER to skip"));

        String cpu = sc.nextLine();

        setCpu(cpu.length() > 0 ? cpu : this.cpu);

        System.out.println("Enter the new ram or press ENTER to skip");

        double ram = sc.nextDouble();

        setRam (ram > 0 ? ram : this.ram);

        System.out.println("Enter the new ssd or press ENTER to skip");

        double ssd = sc.nextDouble();

        setSsd ( ssd > 0 ? ssd : this.ssd);

    }

    public double calculateSalesTax() {

        return getPriceWithGST;

    }

}

//Tv.java

import java.util.Scanner;

class Tv extends Electronics {

    private int screenSize;

    public Tv() {

        super();

        this.screenSize = 0;

    }

    public Tv(String brand, String model, double price, double power, int screenSize) {

        super(brand, model, price, power);

        this.screenSize = screenSize;

    }

    public int getScreenSize() {

        return screenSize;

    }

    public void setScreenSize(int screenSize) {

        this.screenSize = screenSize;

    }

    public void display() {

        super.display();

        System.out.println("Screen size: " + screenSize );

    }

    public void edit(Scanner sc) {

        super.edit(sc);

        System.out.println(("Enter the new screenSize or press ENTER to skip"));

        int screenSize = sc.nextInt();

        setScreenSize(screenSize > 0 ? screenSize : this.screenSize);

    }

    public double calculateSalesTax() {

        return getPriceWithGST;

    }

}