**JAVA编程进阶上机报告**

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第一次上机作业

**学 院\_智能与计算学部\_\_**

**专 业\_\_\_\_\_软件工程\_\_\_\_**

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# 一、实验要求

1. **需求描述：**

某计算机组装公司主要销售各类组装计算机，计算机一般由CPU、内存、主板、硬盘等组件构成。具体组件信息如下：

|  |  |  |
| --- | --- | --- |
| 组件名 | 组件品牌 | 组件属性 |
| CPU | Intel、AMD | Name，coreNum，price |
| 内存 | Samsung, Kingston | Name, volume, price |
| 硬盘 | Seagate, WestDigitals | Name, volume, price |
| 主板 | Asus、Gigabyte | Name，speed, price |

每个组件都有自己的工作方式，简单起见，每个组件的工作内容为打印“组件名+work”。

1. **实现功能：**

具体要求：

1. 针对每个组件的每个品牌，设计一个类，并画成整体的类图
2. 设计计算机类（Computer.java），由上述四类组件组装而成，包括计算机的名称、计算机的描述（包括各个组件名）以及总价格等
3. 设计计算机销售主类（ComputerStore.java），包括3个由不同组件组装在一起的计算机实例，可实现计算机商品一览表，可展示每台计算机的描述、价格、工作等。
4. 设计时基于抽象类和接口，要尽可能的实现高内聚、低耦合。

# 二、源代码

public class CPU {

String name;

Double price;

int coreNum = 0;

public CPU() {

// **TODO** Auto-generated constructor stub

}

public CPU(String name, Double price, int coreNum) {

this.name = name;

this.price = price;

this.coreNum = coreNum;

}

public void work() {

System.***out***.print(this.name + "work");

}

}

public class MainBoard {

Double speed;

String name;

Double price;

public MainBoard() {

// **TODO** Auto-generated constructor stub

}

public MainBoard(String name, Double price, Double speed) {

this.name = name;

this.price = price;

this.speed = speed;

}

public void work() {

System.***out***.print(this.name + "work");

}

}

# 三、运行结果

public class MainBoard {

Double speed;

String name;

Double price;

public MainBoard() {

// **TODO** Auto-generated constructor stub

}

public MainBoard(String name, Double price, Double speed) {

this.name = name;

this.price = price;

this.speed = speed;

}

public void work() {

System.***out***.print(this.name + "work");

}

}

public class Memory {

Double volume;

String name;

Double price;

public Memory() {

// **TODO** Auto-generated constructor stub

}

public Memory(String name, Double volume, Double speed) {

this.name = name;

this.price = price;

this.volume = speed;

}

public void work() {

System.***out***.print(this.name + "work");

}

}

public class HardDisk {

Double volume;

String name;

Double price;

public HardDisk() {

// **TODO** Auto-generated constructor stub

}

public HardDisk(String name,Double volume, Double price) {

this.name = name;

this.price = price;

this.volume = volume;

}

public void work() {

System.***out***.print(this.name + "work");

}

}

public class Computer {

private String name;

private CPU CPU;

private Memory memory;

private HardDisk hardDisk;

private MainBoard mainBoard;

private Double price;

public String getName() {

return name;

}

public CPU getCPU() {

return CPU;

}

public Memory getMemory() {

return memory;

}

public HardDisk getHardDisk() {

return hardDisk;

}

public MainBoard getMainBoard() {

return mainBoard;

}

public Double getPrice() {

return price;

}

public String getDescription() {

String str = this.name + " CPU: " + this.CPU.name + " Memory: " + this.memory + " MainBoard: " + this.mainBoard + "HardDisk: " + this.hardDisk;

return str;

}

public String work() {

return "电脑在工作！";

}

public Computer(String name, Double price, CPU cpu, Memory memory, HardDisk hd, MainBoard mb) {

// **TODO** Auto-generated constructor stub

this.name = name;

this.price = price;

this.CPU = cpu;

this.hardDisk = hd;

this.memory = memory;

this.mainBoard = mb;

}

}

public class ComputerStore {

Computer computer1;

Computer computer2;

Computer computer3;

public ComputerStore() {

// **TODO** Auto-generated constructor stub

}

public ComputerStore(Computer cmp1,Computer cmp2, Computer cmp3) {

this.computer1 = cmp1;

this.computer2 = cmp2;

this.computer3 = cmp3;

}

public void showComputerInfo() {

System.***out***.print(computer1.getName() + "描述：" + computer1.getDescription() + "价格：" + computer1.getPrice() + "工作状态：" + computer1.work());

System.***out***.print(computer2.getName() + "描述：" + computer2.getDescription() + "价格：" + computer2.getPrice() + "工作状态：" + computer2.work());

System.***out***.print(computer3.getName() + "描述：" + computer3.getDescription() + "价格：" + computer3.getPrice() + "工作状态：" + computer3.work());

}

}

public class SamsungM extends Memory{

public SamsungM() {

// **TODO** Auto-generated constructor stub

}

public SamsungM(String name, Double volume, Double price) {

super(name,volume,price);

}

}

public class SamsungM extends Memory{

public SamsungM() {

// **TODO** Auto-generated constructor stub

}

public SamsungM(String name, Double volume, Double price) {

super(name,volume,price);

}

}

public class KingstonM extends Memory{

public KingstonM() {

// **TODO** Auto-generated constructor stub

}

public KingstonM(String name, Double volume, Double price) {

super(name,volume,price);

}

}

public class InterCPU extends CPU{

public InterCPU() {

// **TODO** Auto-generated constructor stub

}

public InterCPU(String name, Double price, int coreNum) {

super(name,price, coreNum);

}

}

public class AMDCPU extends CPU {

public AMDCPU() {

// **TODO** Auto-generated constructor stub

}

public AMDCPU(String name,Double price, int coreNum) {

super(name,price, coreNum);

}

}

public class WDHD extends HardDisk{

public WDHD() {

// **TODO** Auto-generated constructor stub

}

public WDHD(String name, Double volume, Double price) {

super(name,volume,price);

}

}

public class SeagateHD extends HardDisk{

public SeagateHD() {

// **TODO** Auto-generated constructor stub

}

public SeagateHD(String name, Double volume, Double price) {

super(name,volume,price);

}

}

public class GMB extends MainBoard {

public GMB() {

// **TODO** Auto-generated constructor stub

}

public GMB(String name, Double price, Double speed) {

super(name, price,speed);

}

}

public class ASMB extends MainBoard {

public ASMB() {

// **TODO** Auto-generated constructor stub

}

public ASMB(String name, Double price, Double speed) {

super(name,price,speed);

}

}

# 三、设计思路

# 