# 第6次平时作业

package work6;  
  
/\* 抽象类Student\*/  
public abstract class Student {  
 String name;  
 String course;  
 double grade;  
  
 public Student(){  
  
 }  
  
 /\* 单grade参数构造函数\*/  
 public Student(double grade) {  
 this.name = "normal student";  
 this.course = "common course";  
 this.grade = grade;  
 }  
  
 /\* 全参构造函数\*/  
 public Student(String name, String course, double grade) {  
 this.name = name;  
 this.course = course;  
 this.grade = grade;  
 }  
  
 /\* 定义抽象方法，得到成绩等级\*/  
 public abstract String getGradeRank();  
  
 /\* 抽象方法，打印等级\*/  
 public abstract void printGradeRank();  
}

package work6;  
  
/\* 子类Undergraduate 实现父类抽象类，实现多态\*/  
public class Undergraduate extends Student{  
  
 public Undergraduate() {  
 }  
  
 public Undergraduate(double grade) {  
 super(grade);  
 }  
  
 public Undergraduate(String name, String course, double grade) {  
 super(name, course, grade);  
 }  
  
 /\* 实现抽象方法，评价稍松\*/  
 @Override  
 public String getGradeRank() {  
 if(this.grade - 60.0 < 0.0){  
 return "fail";  
 }  
 else if(this.grade - 80.0 < 0.0 && this.grade -60.0 >= 0.0){  
 return "pass";  
 }  
 else if(this.grade - 90.0 < 0.0 && this.grade - 80.0 >= 0.0){  
 return "good";  
 }  
 else {  
 return "excellent";  
 }  
 }  
  
 /\* 抽象方法实现，打印信息和等级\*/  
 @Override  
 public void printGradeRank() {  
 System.*out*.print(this.name+" "+this.course+" "+this.grade);  
 System.*out*.println(" here is a undergraduate, and this people's rank is: "+this.getGradeRank());  
 }  
}

package work6;  
  
/\* 子类Postgraduate实现抽象父类\*/  
public class Postgraduate extends Student{  
  
 public Postgraduate() {  
 }  
  
 public Postgraduate(double grade) {  
 super(grade);  
 }  
  
 public Postgraduate(String name, String course, double grade) {  
 super(name, course, grade);  
 }  
  
 /\* 同理，稍严格\*/  
 @Override  
 public String getGradeRank() {  
 if(this.grade - 60.0 < 0.0){  
 return "fail";  
 }  
 else if(this.grade - 70.0 < 0.0 && this.grade -60.0 >= 0.0){  
 return "pass";  
 }  
 else if(this.grade - 80.0 < 0.0 && this.grade - 70.0 >= 0.0){  
 return "notBad";  
 }  
 else if(this.grade - 95.0 < 0.0 && this.grade - 80.0 >= 0.0){  
 return "good";  
 }  
 else {  
 return "excellent";  
 }  
 }  
  
 /\* 同理\*/  
 @Override  
 public void printGradeRank() {  
 System.*out*.print(this.name+" "+this.course+" "+this.grade);  
 System.*out*.println(" here is a postgraduate, besides this people's rank is: "+this.getGradeRank());  
 }  
}

package work6;  
  
/\* 测试类，新建数组，校验多态实现\*/  
public class PolymorphicTest {  
  
 public static void main(String[] args) {  
 Student [] students = new Student[10];  
 for(int i = 0 ; i < 10 ; i ++){  
 if(i % 2 != 0){  
 students[i] = new Postgraduate("post"+i/2+1,"postCourse",i\*10.0 + 9.0);  
 }  
 else {  
 students[i] = new Undergraduate("under"+i/2,"underCourse",i\*10.0 + 9.0);  
 }  
 }  
 for(Student student : students){  
 student.printGradeRank();  
 }  
 }  
}