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**RK Assignment-1**

Problem-1: (Author, Book)

//*Author*

public class Author {

private String name;

private String email;

private char gender;// 'm' or 'f'

Author(Author author){

name = author.name;

email = author.email;

gender=author.gender;

}

Author(String name,String email, char gender){

this.name=name;

this.email = email;

this.gender = gender;

}

public String getName() {

return name;

}

public String getEmail() {

return email;

}

public void setEmail(String email) {

this.email = email;

}

public char getGender() {

return gender;

}

public String toString(){

return name + " (" + gender + ") " + email;

}

}

//*Book Class*

public class Book extends Author {

private String name;

private Author author;

private double price;

private int qty;

Book(String name, Author author, double price, int qty){

super(author);

this.name = name;

this.price = price;

this.qty = qty;

}

public String getName() {

return name;

}

public Author getAuthor() {

return author;

}

public double getPrice() {

return price;

}

public int getQty() {

return qty;

}

public void setQty(int qty) {

this.qty = qty;

}

public String toString(){

return "'"+ name + "' by " + super.toString();

}

public static void main(String[] args) {

Author a1 = new Author("Herbert Schildt","herbert.S@gmail.com",'m');

Book b1 = new Book("Java The Complete reference",a1,300.5,3);

System.out.println(b1);

System.out.println("Price: " + b1.getPrice() + " units, Quantity: " + b1.getQty());

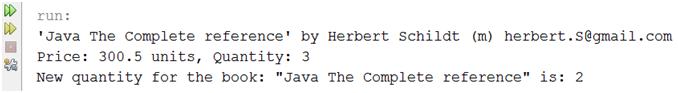
b1.setQty(2);

System.out.println("New quantity for the book: \"" + b1.getName() + "\" is: " + b1.getQty());

}

}

**OUTPUT:**

****

**Problem-2: Shape**

public abstract class Shape {//-----SHAPE CLASS------

private String color;

public void setColor(String color){

this.color = color;

}

public String getColor(){

return color;

}

public abstract double getArea();

public String toString(){

return "Color of Shape: "+ color; }

}

//--------Rectangle Class----------

class Rectangle extends Shape{

private int length;

private int width;

public void setLength(int l){

length = l;

}

public void setWidth(int w){

width= w;

}

public double getArea(){

return length\*width;

}

public String toString(){

return "Rectangle::: length:" + length + "\nwidth: " + width + ", "+super.toString() ;

}

}

//-------------TRIANGLE CLASS---------------

class Triangle extends Shape{

private int base;

private int height;

Triangle(int b,int h){

setBase(b);

setHeight(h);

}

public int getBase() {

return base;

}

public void setBase(int base) {

this.base = base;

}

public int getHeight() {

return height;

}

public void setHeight(int height) {

this.height = height;

}

public double getArea() {

return (0.5\*base\*height);

}

public String toString(){

return "Triangle::: base: "+ base+"\n height " + height+ ", " + super.toString();

}

}

//---------------MAIN CLASS--------------

class MainClass{

public static void main(String[] args) {

Rectangle r1 = new Rectangle();

r1.setLength(5);

r1.setWidth(2);

r1.setColor("Blue");

System.out.println(r1);

System.out.println("Area of Rectangle: "+ r1.getArea() + " square units");

System.out.println("Color of Rectangle: " + r1.getColor());

Triangle t1 = new Triangle(10,5);

t1.setColor("Red");

System.out.println();

System.out.println(t1);

System.out.println("Area of Triangle: " + t1.getArea() + " square units" + "\nColor of Triangle: " + t1.getColor() );

}

}

**OUTPUT:**

