

Devoir de TP POO (Baaziz Youssef)

Exercice 2 :

- *Personne.java*

```
1 package exercice2;
2 no usages
3 public class Personne {
4     4 usages
5     private String nom, prenom, email;
6     4 usages
7     private String tel;
8     4 usages
9     private int age;
10    no usages
11    public Personne(String nom, String prenom, String email, String tel, int age) {
12        super();
13        this.nom = nom;
14        this.prenom = prenom;
15        this.email = email;
16        this.tel = tel;
17        this.age = age;
18    }
19
20    no usages
21    public String getNom() { return nom; }
22
23    no usages
24    public void setNom(String nom) { this.nom = nom; }
25
26    no usages
27    public String getPrenom() { return prenom; }
28
29    no usages
30    public void setPrenom(String prenom) { this.prenom = prenom; }
31
32    no usages
33    public String getEmail() { return email; }
34
35    no usages
36    public void setEmail(String email) { this.email = email; }
37
38    no usages
39    public String getTel() { return tel; }
40
41    no usages
42    public void setTel(String tel) { this.tel = tel; }
43
44    no usages
45    public int getAge() { return age; }
46
47    no usages
48    public void setAge(int age) { this.age = age; }
49
50    no usages
51    @Override
52    public String toString() {
53        return "Personne [nom=" + nom + ", prenom=" + prenom + ", email=" + email + ", tel=" + tel + ", age=" + age
54            + " ]";
55    }
56 }
```

- *Adherent.java*

```
1 package exercice2;
2
3 no usages
4 public class Adherent extends Personne {
5
6     2 usages
7     private int numAdherent;
8
9     no usages
10    public Adherent() {
11        •
12    }
13
14    no usages
15    public Adherent(String nom, String prenom, String email, String tel, int age, int numAdherent) {
16        super(nom, prenom, email, tel, age);
17        // TODO Auto-generated constructor stub
18        this.numAdherent = numAdherent;
19    }
20
21    no usages
22    @Override
23    public String toString() { return "Adherent [" + super.toString() + " numAdherent=" + numAdherent + " ]"; }
24
25 }
```

- *Auteur.java*

```

1 package exercice2;
2
3 no usages
4 public class Auteur extends Personne {
5
6     2 usages
7     private int numAuteur;
8
9     no usages
10    public Auteur() {
11    }
12
13    no usages
14    public Auteur(String nom, String prenom, String email, String tel, int age, int numAuteur) {
15        super(nom, prenom, email, tel, age);
16        // TODO Auto-generated constructor stub
17        this.numAuteur = numAuteur;
18    }
19
20    no usages
21    @Override
22    public String toString() { return "Auteur [" + super.toString() + " numAuteur=" + numAuteur + "]; }" }
23
24 }

```

- *Livre.java*

```

1 package exercice2;
2
3 no usages
4 public class Livre {
5
6     2 usages
7     private int isbn;
8     2 usages
9     private String titre;
10    2 usages
11    private Auteur auteur;
12
13    no usages
14    public Livre() {
15    }
16
17    no usages
18    public Livre(int isbn, String titre, Auteur auteur) {
19        super();
20        this.isbn = isbn;
21        this.titre = titre;
22        this.auteur = auteur;
23    }
24
25    no usages
26    @Override
27    public String toString() { return "Livre [isbn=" + isbn + ", titre=" + titre + ", auteur=" + auteur.toString() + "]; }" }
28
29 }

```

- *Main.java*

```

1 package exercice2;
2
3 no usages
4 public class main {
5
6     no usages
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9
10        Adherent ad = new Adherent("youssef","baaziz","youssefbz@gmail.com","087756585",22,002);
11        Auteur auteur = new Auteur("anas","lkwifa","lkwifa23@gmail.com","9988674543",52,003);
12        Livre livre = new Livre(21,"basatin arbistan",auteur);
13
14        System.out.println("-----info of adherent -----");
15        System.out.println(ad.toString());
16
17        System.out.println("-----info of livre -----");
18        System.out.println(livre.toString());
19    }
20 }

```

Exercice 3 :

- *Vehicule.java*

```
1 package exercice3;
2
3 no usages
4 public class Vehicule {
5
6     2 usages
7     private String nom;
8     2 usages
9     private double prix;
10
11     no usages
12     public Vehicule() {
13     }
14
15     no usages
16     public Vehicule(String nom, double prix) {
17         super();
18         this.nom = nom;
19         this.prix = prix;
20     }
21
22     no usages
23     public void emettreSon() { System.out.println("Le véhicule émet un son inconnu."); }
24
25     no usages
26     public String afficherInformations() { return "nom : "+nom+" prix : "+prix; }
27
28 }
```

- *Voiture.java*

```
1 package exercice3;
2
3 no usages
4 public class Voiture extends Vehicule{
5
6     2 usages
7     private String modele,annee;
8
9     no usages
10    public Voiture(String nom, double prix, String modele, String annee) {
11        super(nom, prix);
12        this.modele = modele;
13        this.annee = annee;
14    }
15
16    no usages
17    public void emettreSon() { System.out.println("La voiture vrombit"); }
18
19    no usages
20    @Override
21    public String toString() { return " modele=" + modele + ", annee=" + annee; }
22
23 }
24
```

- *Moto.java*

```
1 package exercice3;
2
3 public class Moto extends Vehicule{
4
5     private String marque,puissance;
6
7     public Moto(String nom, double prix, String marque, String puissance) {
8         super(nom, prix);
9         this.marque = marque;
10        this.puissance = puissance;
11    }
12
13    public void emettreSon() { System.out.println("La moto rugit"); }
14
15    @Override
16    public String toString() { return " marque=" + marque + ", puissance=" + puissance; }
17
18 }
```

- *Avion.java*

```
1 package exercice3;
2
3 public class Avion extends Vehicule{
4
5     private String compagnie,vitesseMax;
6
7     public Avion(String nom, double prix, String compagnie, String vitesseMax) {
8         super(nom, prix);
9         this.compagnie = compagnie;
10        this.vitesseMax = vitesseMax;
11    }
12
13    public void emettreSon() { System.out.println("L'avion fait un bruit de moteur puissant"); }
14
15    @Override
16    public String toString() { return " compagnie=" + compagnie + ", vitesseMax=" + vitesseMax; }
17
18 }
```

- *Main.java*

```

1  package exercice3;
2
3  no usages
4  public class main {
5
6      no usages
7      public static void main(String[] args) {
8          // TODO Auto-generated method stub
9
10         Vehicule vh = new Vehicule("car",2000);
11         Moto moto = new Moto("yamaha",1700,"2024","2000");
12         Voiture voiture = new Voiture("mercedes",20000,"2024","2009");
13         Avion avion = new Avion("yamaha",90000,"2024","2005");
14
15         System.out.println("-----info of moto -----");
16         System.out.println(moto.afficherInformations()+moto.toString());
17         System.out.println("-----info of voiture -----");
18         System.out.println(voiture.afficherInformations()+voiture.toString());
19         System.out.println("-----info of avion -----");
20         System.out.println(avion.afficherInformations()+avion.toString());
21
22         System.out.println("-----son spécifique de moto -----");
23         moto.emettreSon();
24         System.out.println("-----son spécifique de voiture -----");
25         voiture.emettreSon();
26         System.out.println("-----son spécifique de avion -----");
27         avion.emettreSon();
28     }
29 }

```

Exercice 4 :

- *Employe.java*

```

1  package exercice4;
2
3  no usages
4  public abstract class Employe {
5
6      1 usage
7      protected String nom, prenom, email, telephone;
8      1 usage
9      protected double salaire;
10
11      no usages
12      public Employe() {
13      }
14
15      no usages
16      public Employe(String nom, String prenom, String email, String telephone, double salaire) {
17          super();
18          this.nom = nom;
19          this.prenom = prenom;
20          this.email = email;
21          this.telephone = telephone;
22          this.salaire = salaire;
23      }
24
25      no usages
26      public abstract double calculerSalaire();
27  }

```

- *Ingenieur.java*

```

1  package exercice4;
2
3  no usages
   public class Ingenieur extends Employee{
4      3 usages
       private String specialite;
5
6      no usages
       public Ingenieur() {
7
8      }
9
10     no usages
       public Ingenieur(String nom, String prenom, String email, String telephone, double salaire,String specialite) {
11         super(nom,prenom,email,telephone,salaire);
12         this.specialite = specialite;
13     }
14
15     no usages
       @Override
       public double calculerSalaire() {
16         double augmentation = super.salaire * 0.20;
17         return super.salaire + augmentation;
18     }
19
20     no usages
       public String getSpecialite() { return specialite; }
23
24     no usages
       @Override
       public String toString() {
25         return "Ingenieur [specialite=" + specialite + ", nom=" + nom + ", prenom=" + prenom + ", email=" + email
26             + ", telephone=" + telephone + ", salaire=" + salaire + "];"
27     }
28 }
29
30 }
31

```

- *Manager.java*

```

1  package exercice4;
2
3  no usages
   public class Manager extends Employee{
4      3 usages
       private String service;
5
6      no usages
       public Manager() {
7
8      }
9
10     no usages
       public Manager(String nom, String prenom, String email, String telephone, double salaire, String service) {
11         super(nom,prenom,email,telephone,salaire);
12         this.service = service;
13     }
14
15     no usages
       @Override
       public double calculerSalaire() {
16         double augmentation = super.salaire * 0.20;
17         return super.salaire + augmentation;
18     }
19
20     no usages
       public String getService() { return service; }
23
24     no usages
       @Override
       public String toString() {
25         return "Manager [service=" + service + ", nom=" + nom + ", prenom=" + prenom + ", email=" + email
26             + ", telephone=" + telephone + ", salaire=" + salaire + "];"
27     }
28 }
29
30 }
31

```

- *Main.java*

```

1 package exercice4;
2
3 no usages
4 public class main {
5
6     no usages
7     public static void main(String[] args) {
8         // TODO Auto-generated method stub
9
10        Ingenieur ing = new Ingenieur("youssef","lkwifa","youssef@gmail.com","06512342",9000.0,"Dev Web");
11        Manager manager = new Manager("anas","hakimi","anas@gmail.com","07556432",7000.0,"service informatique");
12
13        System.out.println("info de ingénieur");
14        System.out.println(ing);
15        System.out.println("info de manager");
16        System.out.println(manager);
17    }
18 }

```

Exercise 5 :

- *Figure.java*

```

1 3 usages 3 inheritors
2 public abstract class Figure {
3     1 usage
4     protected String protege;
5     5 usages
6     protected String nom;
7
8     no usages
9     public Figure(String protege, String nom) {
10         this.protege = protege;
11         this.nom = nom;
12     }
13
14     3 usages
15     public Figure(String nom) {
16         this.nom = nom;
17     }
18
19     3 usages 3 implementations
20     public abstract double calculerAire();
21     3 usages 3 implementations
22     public abstract double calculerPerimetre();
23     3 usages 3 implementations
24     public abstract void afficherDetails();
25 }

```

- *Cercle.java*

```

1      2 usages
   public class Cercle extends Figure {
2          4 usages
   private double rayon;
3
4          1 usage
   public Cercle(String nom, double rayon) {
5       super(nom);
6       this.rayon = rayon;
7   }
8
9          3 usages
   @Override
10  public double calculerAire() { return Math.PI * rayon * rayon; }
13
14         3 usages
   @Override
15  public double calculerPerimetre() {
16      return 2 * Math.PI * rayon;
17  }
18
19         3 usages
   @Override
20  public void afficherDetails() {
21      System.out.println("nom : "+nom+" | aire : "+calculerAire()+" | perimetre : "+calculerPerimetre());
22  }
23  }
24

```

- *Rectangle.java*

```

1      2 usages
   public class Rectangle extends Figure{
2          3 usages
   private double longueur;
3          3 usages
   private double largeur;
4
5          1 usage
   public Rectangle(String nom, double longueur, double largeur) {
6       super(nom);
7       this.longueur = longueur;
8       this.largeur = largeur;
9   }
10
11         3 usages
   @Override
12  public double calculerAire() { return largeur * longueur; }
15
16         3 usages
   @Override
17  public double calculerPerimetre() { return 2 * (longueur + largeur); }
20
21         3 usages
   @Override
22  public void afficherDetails() {
23      System.out.println("nom : "+nom+" | aire : "+calculerAire()+" | perimetre : "+calculerPerimetre());
24  }
25  }
26

```


- *Triangle.java*

```

1      2 usages
   public class Triangle extends Figure{
2          4 usages
   private double a,b,c;
3
4      1 usage
   public Triangle(String nom, double a, double b, double c) {
5          super(nom);
6          this.a = a;
7          this.b = b;
8          this.c = c;
9      }
10
11      3 usages
   @Override
12  public double calculerAire() {
13      double s = (a + b + c) / 2;
14      return Math.sqrt(s * (s - a) * (s - b) * (s - c));
15  }
16
17      3 usages
   @Override
18  public double calculerPerimetre() { return a + b + c; }
21
22      3 usages
   @Override
23  public void afficherDetails() {
24      System.out.println("nom : "+nom+" | aire : "+calculerAire()+" | perimetre : "+calculerPerimetre());
25  }
26  }
27

```

- *Main.java*

```

1      no usages
   public class Main {
2          no usages
   public static void main(String[] args) {
3
4      Cercle cercle = new Cercle( nom: "cercle", rayon: 6.5);
5      Rectangle rectangle = new Rectangle( nom: "rectangle", longueur: 10.5, largeur: 5);
6      Triangle triangle = new Triangle( nom: "Triangle", a: 10, b: 8, c: 5);
7
8      System.out.println("----- info cercle -----");
9      cercle.afficherDetails();
10     System.out.println("----- info rectangle -----");
11     rectangle.afficherDetails();
12     System.out.println("----- info triangle -----");
13     triangle.afficherDetails();
14
15 }
16 }

```