

**Compte rendu TP 8 :**

**Collections**

Atelier Java

**Travail réalisé par :**

Mohamed Aziz Bellaaj

**Groupe :** GL 2/2

Etudiant.java

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| --- |
| import java.util.\*;  public class Etudiant implements Comparable<Etudiant> {  public String nom;  public String prenom;  public int numero;  public int age;  public float moyenne;  public Etudiant(String nom, String prenom, int numero, int age, float moyenne) {  this.nom = nom;  this.prenom = prenom;  this.numero = numero;  this.age = age;  this.moyenne = moyenne;  }  public int compareTo(Etudiant e) {  return Float.compare(moyenne, e.moyenne);  }  } |

CompareByAge.java

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| --- |
| import java.util.\*;  public class CompareByAge implements Comparator<Etudiant> {  public int compare(Etudiant o1, Etudiant o2) {  return Integer.compare(o1.age, o2.age);  }  } |

CompareByMoyenne.java

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| --- |
| import java.util.\*;  public class CompareByMoyenne implements Comparator<Etudiant> {  public int compare(Etudiant o1, Etudiant o2) {  return Float.compare(o1.moyenne, o2.moyenne);  }  } |

CompareEtudiant.java

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| --- |
| import java.util.\*;  class CompareEtudiant {  public static void main(String[] args) {    ArrayList<Etudiant> a = new ArrayList<Etudiant>();  Scanner sc = new Scanner(System.in);  boolean cond = true;  System.out.println("Insert students ");  while (cond) {  System.out.println("nom = ");  String nom = sc.nextLine();  System.out.println("prenom = ");  String prenom = sc.nextLine();  System.out.println("numero = ");  int numero= sc.nextInt();  System.out.println("age = ");  int age= sc.nextInt();  System.out.println("moyenne = ");  float moyenne= sc.nextFloat();  Etudiant e = new Etudiant(nom, prenom, numero,age,moyenne);  a.add(e);  System.out.println("type true to continue, false to exit");  cond = sc.nextBoolean();  sc.nextLine();  }  CompareByAge comp1 = new CompareByAge();  CompareByMoyenne comp2 = new CompareByMoyenne();  System.out.println("To sort by age, press 1. To sort by average, press 2");  int mode = sc.nextInt();  for (Etudiant x : a) {  System.out.println(x.nom + " has " + x.moyenne + " average and " + x.age + " years olds");  }  System.out.println("\n\nSorting a elements...");  switch (mode) {  case 1:  Collections.sort(a, comp1);  break;  case 2:  Collections.sort(a, comp2);  break;  default:  System.out.println("Invalid option");  }  for (Etudiant x : a) {  System.out.println(x.nom + " has " + x.moyenne + " average and " + x.age + " years olds");  }  }  } |