

Author

```
1 class Author {
2     //Attributes
3     String name;
4     String email;
5     char gender;
6     //Methods
7     Author(String name,    String email, char gender){
8         this.name = name;
9         this.email = email;
10        this.gender = gender;
11    }
12    String getName(){ return name; }
13    String getEmail(){ return email; }
14    void setEmail(String email){ this.email = email; }
15    char getGender(){ return gender; }
16    public String toString(){ return "Author[name = "+name+", email = "+email+", gender = "+gender+"]";}
17
18 }
```

TestAuthor

```
1 class TestAuthor {
2
3     public static void main(String[] args) {
4         //Objects construction
5         Author jhon = new Author("Jhon Dac", "jhon.dac@gmail.com", 'm');
6         Author sara = new Author("Sara Fadil", "sar.fadil@yahoo.cc.com", 'f');
7         //Objects manipulation
8         sara.setEmail("sara.fadil@yahoo.cc.com");
9         System.out.println(jhon.getName()+"", "+jhon.getEmail()+"", "+jhon.getGender());
10        System.out.println(sara.toString());
11
12    }
13
14 }
```

Book

```
1  class Book {
2      //Attributes
3      String name;
4      Author author;
5      double price;
6      int qty = 0;
7      //Methods
8      Book(String name, Author author, double price){
9          this.name = name;
10         this.author = author;
11         this.price = price;
12     }
13     Book(String name, Author author, double price, int qty){
14         this(name, author, price);
15         this.qty = qty;
16     }
17     String getName(){ return name; }
18     Author getAuthor(){ return author; }
19     double getPrice(){ return price; }
20     void setPrice(double price){ this.price = price;}
21     int getQty(){ return qty;}
22     void setQty(int qty){this.qty = qty;}
23     public String toString(){ return "Book [name = "+name+", "+author.toString()+", price = "+price+", qty = "+qty+"]";}
24
25     //Other methods
26     String getAuthorName(){ return author.getName(); }
27     String getAuthorEmail(){ return author.getEmail(); }
28     char getAuthorGender(){ return author.getGender(); }
29
30 }
```

TestBook

```
1  class TestBook {
2      public static void main(String[] args) {
3          // Objects construction
4          Author a1 = new Author("Harry Hariom Choudhary", "H.H.Choudhary@gmail.com", 'm');
5          Author a2 = new Author("Sarah Dessen", "Sarah.Dessen@hotmail.com", 'f');
6
7          Book b1 = new Book("Introduction to Java Programming, Comprehensive Version", a1, 8500, 20);
8          Book b2 = new Book("Once and for All", a2, 4200);
9
10         //Manipulation
11         b2.setQty(50);
12         b2.setPrice(3000);
13         System.out.println(b1.getName()+" "+b1.getPrice()+" "+b1.getQty()+ " author:"+b1.getAuthor().getName());
14         System.out.println(b2.toString());
15     }
16
17 }
```

Book2 (Multi-Author)

```
1 class Book2 {
2     //Attributes
3     String name;
4     Author[] authors;
5     double price;
6     int qty = 0;
7     //Methods
8     Book2(String name, Author[] authors, double price){
9         this.name = name;
10        this.authors = authors;
11        this.price = price;
12    }
13    Book2(String name, Author[] authors, double price, int qty){
14        this(name, authors, price);
15        this.qty = qty;
16    }
17    String getName(){ return name; }
18    Author[] getAuthors(){ return authors; }
19    double getPrice(){ return price; }
20    void setPrice(double price){ this.price = price;}
21    int getQty(){ return qty;}
22    void setQty(int qty){this.qty = qty;}
23    public String toString(){
24        String text = "Book [name = "+name+", ";
25        for(int i=0; i<authors.length; i++)
26            text += ' ' + authors[i].toString();
27        text += ", price = "+price+", qty = "+qty+"]";
28        return text;
29    }
30
31    //Other methods
32    String[] getAuthorNames(){
33        String[] text = new String[authors.length];
34        for(int i=0; i<authors.length; i++)
35            text[i] = authors[i].getName();
36        return text;
37    }
38    String[] getAuthorEmails(){
39        String[] text = new String[authors.length];
40        for(int i=0; i<authors.length; i++)
41            text[i] = authors[i].getEmail();
42        return text;
43    }
```

```
44     char[] getAuthorGenders() {
45         char[] text = new char[authors.length];
46         for(int i=0; i<authors.length; i++)
47             text[i] = authors[i].getGender();
48         return text;
49     }
50
51 }
```

TestBook2

```
1  public class TestBook2 {
2      public static void main(String[] args) {
3          //Construction
4          Author a1 = new Author("Ian Goodfellow", "Ian.Goodfellow@gmail.com", 'm');
5          Author a2 = new Author("Yoshua Bengio", "Yoshua.Bengio@gmail.com", 'm');
6          Author a3 = new Author("Aaron Courville", "Aaron.Courville@gmail.com", 'm');
7          //Manipulation
8          Book2 b = new Book2("Deep Learning", new Author[]{a1,a2, a3}, 10000, 200);
9          System.out.println(b.toString());
10     }
11 }
```