Write a Java program to create a class called "Book" with attributes for title, author, and ISBN, and methods to add and remove books from a collection.

Sample Solution:

Java Code:

```
//Book.java
// Import the ArrayList class from the java.util package
import java.util.ArrayList;

// Define the Book class
public class Book {
    // Declare a private variable to store the title of the book
    private String title;
    // Declare a private variable to store the author of the book
    private String author;
    // Declare a private variable to store the ISBN of the book
    private String ISBN;
    // Declare a static ArrayList to store the collection of Book objects
    private static ArrayList<Book> bookCollection = new ArrayList<Book>();

    // Constructor for the Book class that initializes the title, author, a
    public Book(String title, String author, String ISBN) {
        // Set the title variable to the provided title parameter
        this.title = title;
        // Set the author variable to the provided author parameter
        this.author = author;
        // Set the ISBN variable to the provided ISBN parameter
        this.ISBN = ISBN;
    }

    // Method to retrieve the title of the book
    public String get_Title() {
        // Return the value of the title variable
        return title;
    }

    // Method to set the title of the book
```

```
public void set_Title(String title) {
    // Set the title variable to the provided title parameter
    this.title = title;
}

// Method to retrieve the author of the book
public String get_Author() {
    // Return the value of the author variable
    return author;
}

// Method to set the author of the book
public void set_Author(String author) {
    // Set the author variable to the provided author parameter
    this.author = author;
}

// Method to retrieve the ISBN of the book
public String get_ISBN() {
    // Return the value of the ISBN variable
    return ISBN;
}

// Method to set the ISBN of the book
public void set_ISBN(String ISBN) {
    // Set the ISBN variable to the provided ISBN parameter
    this.ISBN = ISBN;
}

// Static method to add a book to the book collection
public static void add_Book(Book book) {
    // Add the provided book object to the bookCollection ArrayList
    bookCollection.add(book);
}

// Static method to remove a book from the book collection
public static void remove_Book(Book book) {
    // Remove the provided book object from the bookCollection ArrayLis
    bookCollection.remove(book);
}
```

```
    // Static method to retrieve the entire book collection
    public static ArrayList<Book> get_BookCollection() {
        // Return the bookCollection ArrayList
        return bookCollection;
    }
}
```

The above class has three private attributes: title, author and ISBN. It has a constructor that initializes these attributes with the values passed as arguments, and getter and setter methods to access and modify these attributes. It also has static methods to add and remove books from a collection, and a static method to get the book collection.

```
//Main.java
// Import the ArrayList class from the java.util package
import java.util.ArrayList;

// Define the Main class
public class Main {
    // Define the main method which is the entry point of the program
    public static void main(String[] args) {
        // Create an instance of the Book class with the title "The C Progr
        Book book1 = new Book("The C Programming Language", "Dennis Ritchie
        // Create another instance of the Book class with the title "An Int
        Book book2 = new Book("An Introduction to Python", "Guido van Rossu

        // Add book1 to the book collection
        Book.add_Book(book1);
        // Add book2 to the book collection
        Book.add_Book(book2);

        // Retrieve the book collection and store it in an ArrayList named
        ArrayList<Book> bookCollection = Book.get_BookCollection();

        // Print a heading for the list of books
        System.out.println("List of books:");

        // Iterate over each book in the bookCollection
        for (Book book : bookCollection) {
            // Print the title, author, and ISBN of each book
```

```
            System.out.println(book.get_Title() + " by " + book.get_Author(
        }

        // Remove book1 from the book collection
        Book.remove_Book(book1);

        // Print a message indicating that book1 has been removed
        System.out.println("\nAfter removing " + book1.get_Title() + ":");

        // Print a heading for the updated list of books
        System.out.println("List of books:");

        // Iterate over each book in the bookCollection
        for (Book book : bookCollection) {
            // Print the title, author, and ISBN of each book
            System.out.println(book.get_Title() + " by " + book.get_Author(
        }
    }
}
```

In this example code, we create two instances of the "Book" class and add them to the collection with the ‘addBook’ method. We then print the title, author, and ISBN of each book in the collection using a for loop. We also remove book1 from the collection using the ‘removeBook’ method and print the updated collection.

Sample Output:

```
List of books:
The C Programming Language by Dennis Ritchie, Brian Kernighan, ISBN: 97801311016
An Introduction to Python by Guido van Rossum, ISBN: 9355423489

After removing The C Programming Language:
List of books:
An Introduction to Python by Guido van Rossum, ISBN: 9355423489
```

Flowchart: