

PRACTICAL ASSESSMENT

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Problem Statement:

Develop a **menu-driven console application** in Java that performs **CRUD (Create, Read, Update, Delete)** operations on airline flight records. The application should use **Data Structure** as the data store instead of a database.

Entity to be Used: **Flight**

Fields:

- flightNumber (String) – unique identifier
- airlineName (String)
- source (String)
- destination (String)
- departureTime (String)
- arrivalTime (String)

Tasks:

- **Create:** Add a new flight record.
- **Read:**
 - o Display all flight records.
 - o Search for a flight by flightNumber.
- **Update:** Modify details of an existing flight by flightNumber.
- **Delete:** Remove a flight record by flightNumber.

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Solution :

AirLine class:

```
import java.util.Comparator;

public class AirLine {
    int fno;
    String fname;
    String source;
    String destination;
    String departuretime;
    String arrivaltime;
    public AirLine(int fno, String fname, String source, String destination, String
departuretime, String arrivaltime) {
        super();
        this.fno = fno;
        this.fname = fname;
        this.source = source;
        this.destination = destination;
        this.departuretime = departuretime;
        this.arrivaltime = arrivaltime;
    }
    @Override
    public String toString() {
        return "AirLine [fno=" + fno + ", fname=" + fname + ", source=" + source + ",
destination=" + destination
+ ", departuretime=" + departuretime + ", arrivaltime=" + arrivaltime + "];"
    }
}
```

MainClass

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```
import java.util.LinkedList;
import java.util.List;
import java.util.Scanner;

public class MainMethod {
    static Scanner sc=new Scanner(System.in);
    static List<AirLine>Flights=new LinkedList();
    public static void add() {
        System.out.println("Enter how many flight want to add in the database ");
        int size=sc.nextInt();
        for(int i=0;i<size;i++) {
            System.out.println("Enter flight number:");
            int fno=sc.nextInt();
            System.out.println("Enter flight name:");
            String fname=sc.next();
            System.out.println("Enter Source of the flight:");
            String source=sc.next();
            System.out.println("Enter the destination:");
            String destination=sc.next();
            System.out.println("Enter the depature time:");
            String dt=sc.next();
            System.out.println("Enter the arrival time:");
            String at=sc.next();
            Flights.add(new AirLine(fno,fname,source,destination,dt,at));
        }
        System.out.println(size+"Flights addedd successfully");
        view();
    }
    public static void view() {
        if(Flights.isEmpty())
            System.out.println("Yet Flights are not added to databases");
        else {
            System.out.println("Fligh no      |      Flight name      |      Source |
                               |      Departure Time      |      Arrival Time | ");
            for(AirLine f:Flights) {
                System.out.println( f.fno+"\t\t"+f.fname+"\t\t\t"+f.source+"\t\t\t"+f.destination+
                "\t\t\t"+f.departuretime+"\t\t\t"+f.arrivaltime);
            }
        }
    }
}

public static void searchbyno() {
    if(Flights.isEmpty()) {
        System.out.println("Yet Flights are not added to databases");
        add();
    }
    else {
        System.out.println("Enter the flight number to be searched:");
    }
}
```

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```
int fno=sc.nextInt();
for(AirLine f:Flights) {
    if(f.fno==fno) {
        System.out.println("Flight found");
        System.out.println("Fligh no      |      Flight name |      Source |
                             Destination |      Departure Time      |      Arrival Time | ");
        System.out.println( f.fno+"\t\t"+f.fname+"\t\t\t"+f.source+"\t\t\t"+f.destination+
                             "\t\t\t"+f.departuretime+"\t\t\t"+f.arrivaltime);
    }

}
}
System.out.println("Flight not found");
return;
}

public static void update() {
    boolean found=true;
    if(Flights.isEmpty())
        System.out.println("Yet database are empty Flights are to be added ");
    else {
        System.out.println("Enter the flight number to be searched:");
        int fno=sc.nextInt();
        for(AirLine f:Flights) {
            if(f.fno==fno) {
                System.out.println("Enter fno");
                int fnoo=sc.nextInt();
                f.fno=fnoo;
                System.out.println("Enter fname");
                String fname=sc.next();
                f.fname=fname;
                System.out.println("Enter source");
                String source=sc.next();
                f.source=source;
                System.out.println("Enter destination");
                String destination=sc.next();
                f.destination=destination;
                System.out.println("Enter departure time");
                String dt=sc.next();
                f.departuretime=dt;
                System.out.println("Enter arrival time");
                String at=sc.next();
                f.arrivaltime=at;
                found=false;
            }

        }
        System.out.println("Flight updated successfully!!!");
        view();
    }

}
```

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```
if(found) {
System.out.println("Invalid flight number");
return;
}
}
public static void delete() {
boolean found=true;
if(Flights.isEmpty())
System.out.println("Yet database are empty Flights are to be added");
else {
System.out.println("Enter the flight number to be searched:");
int fno=sc.nextInt();
for(AirLine f:Flights) {
if(f.fno==fno) {
Flights.remove(f);
System.out.println("Flight deleted successfully");
found=false;
view();
}
}
}

if(found) {
System.out.println("Invalid flight no");
return;
}
}

public static void main(String[] args) {

System.out.println("-----AirLine Management System-----");
while(true) {
System.out.println("1.Add Flights \n2.View all Flights \n3.Search Flight by
Flightnumber \n4.Update Flight \n5.Delete Flight \n6.Exit ");
int choice=sc.nextInt();
switch(choice) {
case 1: add();break;
case 2: view();break;
case 3:searchbyno();break;
case 4:update();break;
case 5:delete();break;
case 6:System.out.println("Exisiting form the process.....GoodBye!!!!\n-----
----- Have a Nice day!!!!-----");
return;
default:System.out.println("Invalid choice number");break;
}
}

}
```

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}

Output

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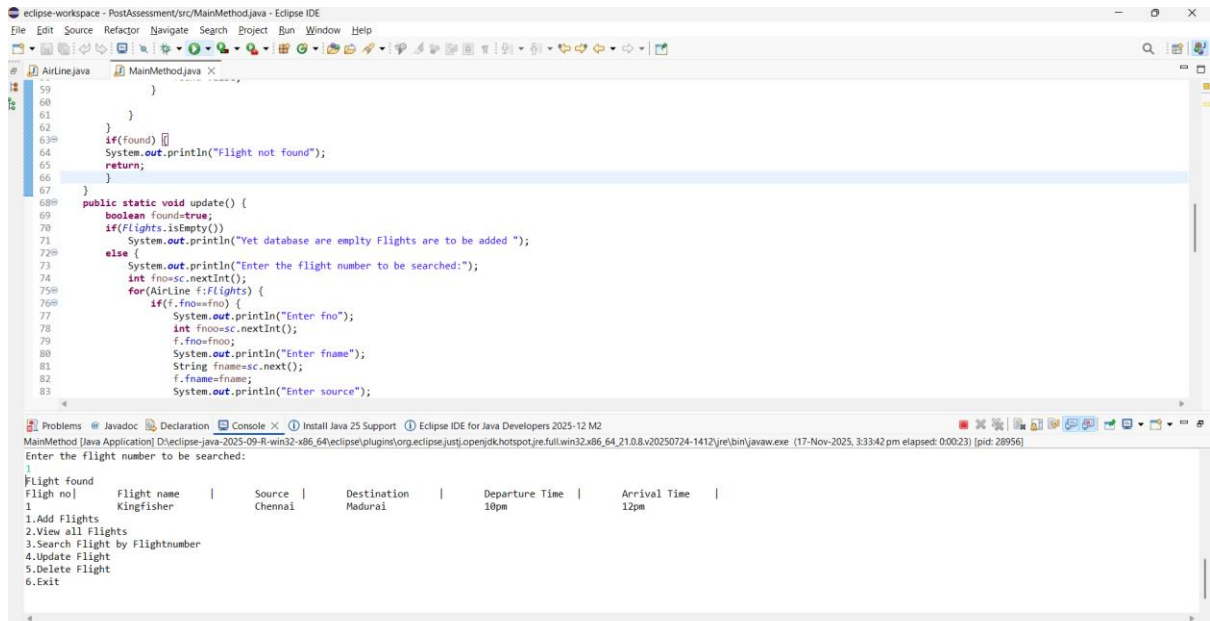
```
107 else {
108     System.out.println("Yet database are empty Flight");
109 }
110 System.out.println("Enter the flight number to");
111 for(AirLine f:Flights) {
112     if(f.fno==fno) {
113         Flights.remove(f);
114         System.out.println("Flight deleted successfully");
115         found=false;
116         view();
117     }
118 }
119 if(found) {
120     System.out.println("Invalid flight no");
121     return;
122 }
123 }
124 }
125 }
126 }
127 public static void main(String[] args) {
128     System.out.println("-----AirLine Management System-----");
129     while(true) {
130         System.out.println("1.Add Flights \n2.View all Flights \n3.Search Flight by Flightnumber \n4.Update Flight \n5.Delete Flight \n6.Exit ");
131         int choice=sc.nextInt();
132         switch(choice) {
133             case 1: add();break;
134             case 2: view();break;
135             case 3: searchbyno();break;
136             case 4: update();break;
137             case 5: delete();break;
138             case 6: System.out.println("Exiting from the process.....GoodBye!!!!\n----- Have a Nice day!!!!-----");
139             return;
140             default: System.out.println("Invalid choice number");break;
141         }
142     }
143 }
144 }
145 }
146 }
147 }
148 }
```

```
1 import java.util.LinkedList;
2 import java.util.List;
3 import java.util.Scanner;
4
5 public class MainMethod {
6     static Scanner sc=new Scanner(System.in);
7     static List<AirLine> flights=new LinkedList();
8     public static void add() {
9
10         System.out.println("Enter how many flight want to add in the database");
11         int size=sc.nextInt();
12         for(int i=0;i<size;i++) {
13             System.out.println("Enter flight number:");
14             int fno=sc.nextInt();
15             System.out.println("Enter flight name:");
16             String fname=sc.next();
17             System.out.println("Enter Source of the flight:");
18             String source=sc.next();
19             System.out.println("Enter the destination:");
20             String destination=sc.next();
21             System.out.println("Enter the departure time:");
22             String dt=sc.next();
23             System.out.println("Enter the arrival time:");
24             String at=sc.next();
25             flights.add(new AirLine(fno,fname,source,destination,dt,at));
26         }
27     }
28     System.out.println("Flights added successfully");
29     view();
30 }
31 public static void view() {
32     if(flights.isEmpty())
33         System.out.println("Yet Flights are not added to databases");
34     else {
35         System.out.println("Flight no | Flight name | Source | Destination | Departure Time | Arrival Time |");
36         for(AirLine f:flights) {
37             System.out.println(f.fno+" | "+f.fname+" | "+f.source+" | "+f.destination+" | "+f.departuretime+" | "+f.arrivaltime);
38         }
39     }
40 }
41 }
42 }
```

Console Output:

```
MainMethod [Java Application] D:\eclipse-java-2025-09-R-win32-x86_64\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.21.0.8.v20250724-1412\jre\bin\javaw.exe (17-N
-----AirLine Management System-----
1.Add Flights
2.View all Flights
3.Search Flight by Flightnumber
4.Update Flight
5.Delete Flight
6.Exit
Enter how many flight want to add in the database
1
Enter flight number:
001
Enter flight name:
Kingfisher
Enter Source of the flight:
Chennai
Enter the destination:
Madurai
Enter the departure time:
10am
Enter the arrival time:
12pm
Flights added successfully
Flight no | Flight name | Source | Destination | Departure Time | Arrival Time
1 | Kingfisher | Chennai | Madurai | 10am | 12pm
1.Add Flights
2.View all Flights
3.Search Flight by Flightnumber
4.Update Flight
5.Delete Flight
6.Exit
```

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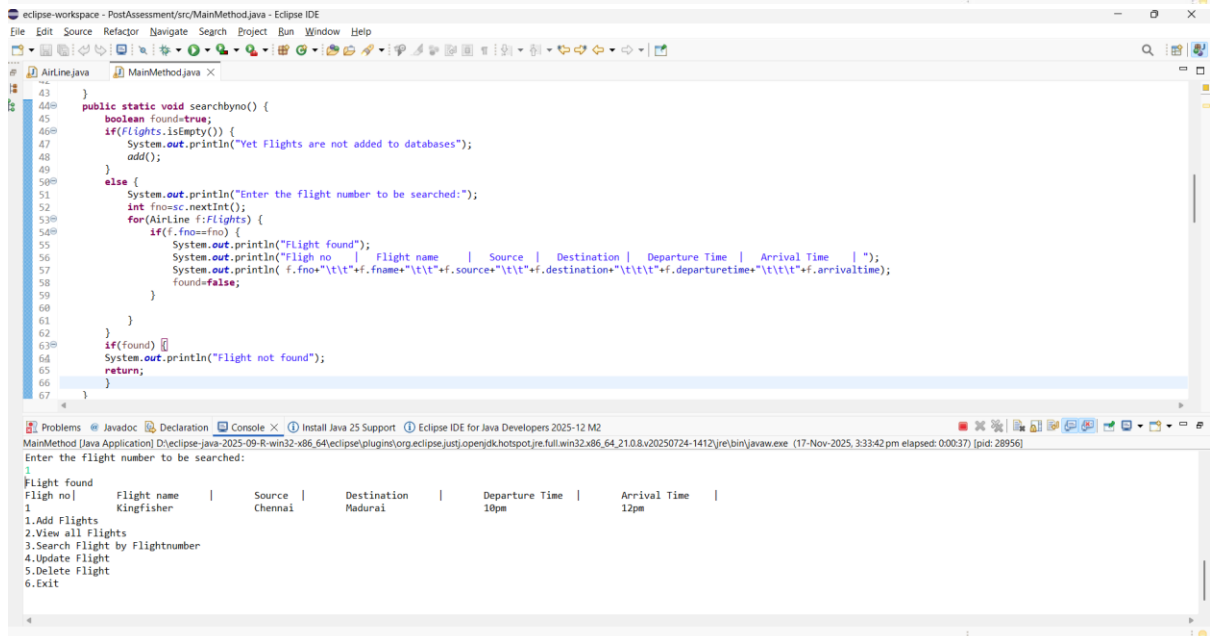
```
59 }
60
61 }
62
63 if(found) {
64     System.out.println("Flight not found");
65     return;
66 }
67 }
68
69 public static void update() {
70     boolean found=true;
71     if(Flights.isEmpty())
72         System.out.println("Yet database are empty Flights are to be added ");
73     else {
74         System.out.println("Enter the flight number to be searched:");
75         int fno=sc.nextInt();
76         for(AirLine f:Flights) {
77             if(f.fno==fno) {
78                 System.out.println("Enter fno");
79                 int fno=sc.nextInt();
80                 f.fno=fno;
81                 System.out.println("Enter fname");
82                 String fname=sc.next();
83                 f.fname=fname;
84                 System.out.println("Enter source");
```

Problems Javadoc Declaration Console X Install Java 25 Support Eclipse IDE for Java Developers 2025-12 M2

MainMethod [Java Application] D:\eclipse-java-2025-09-R-win32-x86_64\eclipse\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.21.0.v20250724-1412\jre\bin\javaw.exe (17-Nov-2025, 3:33:42 pm elapsed: 0:00:23) [pid: 28956]

Enter the flight number to be searched:

```
1
Flight found
Flight no| Flight name | Source | Destination | Departure Time | Arrival Time |
1 Kingfisher Chennai Madurai 10pm 12pm
1.Add Flights
2.View all Flights
3.Search Flight by FlightNumber
4.Update Flight
5.Delete Flight
6.Exit
```



```
43 }
44
45 public static void searchbyno() {
46     boolean found=true;
47     if(Flights.isEmpty()) {
48         System.out.println("Yet Flights are not added to databases");
49         add();
50     }
51     else {
52         System.out.println("Enter the flight number to be searched:");
53         int fno=sc.nextInt();
54         for(AirLine f:Flights) {
55             if(f.fno==fno) {
56                 System.out.println("Flight found");
57                 System.out.println("Flight no | Flight name | Source | Destination | Departure Time | Arrival Time |");
58                 System.out.println(f.fno+"\t\t"+f.fname+"\t\t"+f.source+"\t\t"+f.destination+"\t\t"+f.departuretime+"\t\t"+f.arrivaltime);
59                 found=false;
60             }
61         }
62     }
63     if(found) {
64         System.out.println("Flight not found");
65         return;
66     }
67 }
```

Problems Javadoc Declaration Console X Install Java 25 Support Eclipse IDE for Java Developers 2025-12 M2

MainMethod [Java Application] D:\eclipse-java-2025-09-R-win32-x86_64\eclipse\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.21.0.v20250724-1412\jre\bin\javaw.exe (17-Nov-2025, 3:33:42 pm elapsed: 0:00:37) [pid: 28956]

Enter the flight number to be searched:

```
1
Flight found
Flight no| Flight name | Source | Destination | Departure Time | Arrival Time |
1 Kingfisher Chennai Madurai 10pm 12pm
1.Add Flights
2.View all Flights
3.Search Flight by FlightNumber
4.Update Flight
5.Delete Flight
6.Exit
```


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The image displays two screenshots of the Eclipse IDE, showing the development and execution of a Java application for flight management.

Top Screenshot: The editor shows the `MainMethod.java` file. The `update()` method is implemented, which prompts the user to enter flight details (flight number, name, source, destination, departure time, arrival time) and updates the flight in the database. The console output shows the program running successfully, with the flight updated.

```
public static void update() {
    boolean found=true;
    if(Flights.isEmpty())
        System.out.println("Yet database are empty Flights are to be added ");
    else {
        System.out.println("Enter the flight number to be searched:");
        int fno=sc.nextInt();
        for(AirLine f:Flights) {
            if(f.fno==fno) {
                System.out.println("Enter fno");
                int fnoo=sc.nextInt();
                f.fno=fnoo;
                System.out.println("Enter fname");
                String fname=sc.next();
                f.fname=fname;
                System.out.println("Enter source");
                String source=sc.next();
                f.source=source;
                System.out.println("Enter destination");
                String destination=sc.next();
                f.destination=destination;
                System.out.println("Enter departure time");
                String dt=sc.next();
                f.departuretime=dt;
                System.out.println("Enter arrival time");
            }
        }
    }
}
```

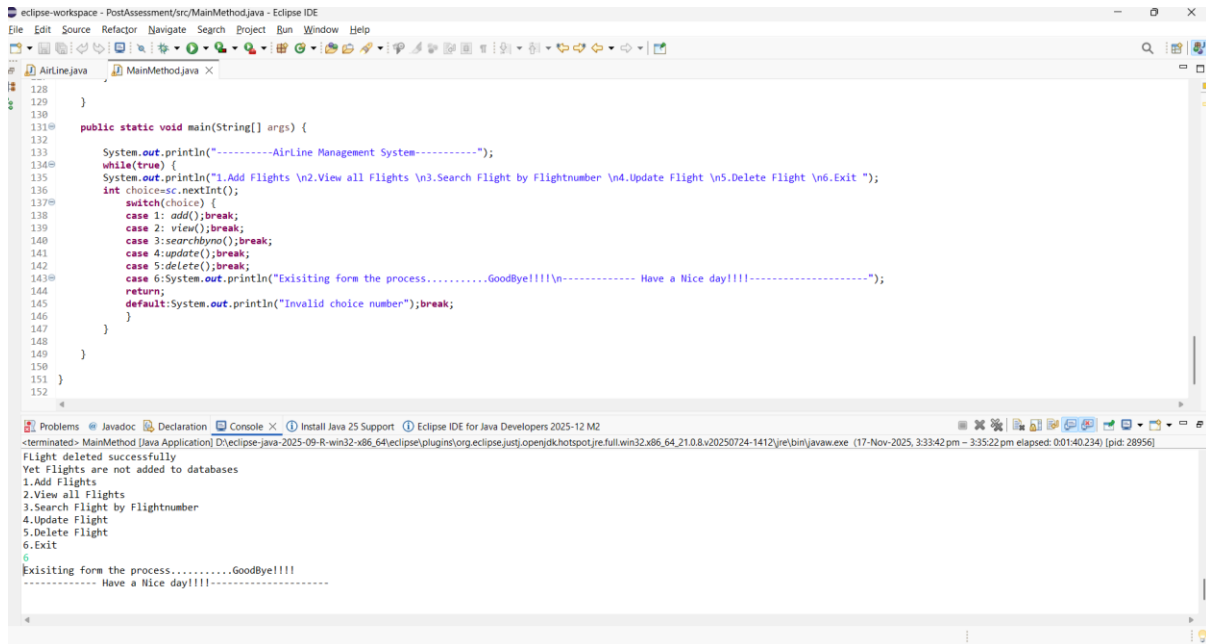
Bottom Screenshot: The editor shows the `delete()` method implementation, which prompts the user to enter a flight number and removes it from the database. The console output shows the program running successfully, with the flight deleted.

```
public static void delete() {
    boolean found=true;
    if(Flights.isEmpty())
        System.out.println("Yet database are empty Flights are to be added");
    else {
        System.out.println("Enter the flight number to be searched:");
        int fno=sc.nextInt();
        for(AirLine f:Flights) {
            if(f.fno==fno) {
                Flights.remove(f);
                System.out.println("Flight deleted successfully");
                found=false;
                view();
            }
        }
    }
    if(found) {
        System.out.println("Invalid flight no");
        return;
    }
}
```

The console output for the bottom screenshot shows the program running successfully, with the flight deleted.

```
Enter the flight number to be searched:
Flight deleted successfully
Yet Flights are not added to databases
1.Add Flights
2.View all Flights
3.Search Flight by Flightnumber
4.Update Flight
5.Delete Flight
6.Exit
```

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The screenshot displays the Eclipse IDE interface. The top toolbar includes standard development tools like File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The main editor window shows the `MainMethod.java` file with the following code:

```
128  
129 }  
130  
131 public static void main(String[] args) {  
132  
133     System.out.println("-----AirLine Management System-----");  
134     while(true) {  
135         System.out.println("1.Add Flights \n2.View all Flights \n3.Search Flight by Flightnumber \n4.Update Flight \n5.Delete Flight \n6.Exit ");  
136         int choice=sc.nextInt();  
137         switch(choice) {  
138             case 1: add();break;  
139             case 2: view();break;  
140             case 3: searchbyno();break;  
141             case 4: update();break;  
142             case 5: delete();break;  
143             case 6: System.out.println("Exisiting form the process.....GoodBye!!!!\n----- Have a Nice day!!!!-----");  
144                 return;  
145             default: System.out.println("Invalid choice number");break;  
146         }  
147     }  
148 }  
149 }  
150 }  
151 }  
152 }
```

The bottom console window shows the output of the program:

```
<terminated> MainMethod [Java Application] D:\eclipse-java-2025-09-R-win32-x86_64\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_21.0.8.v20250724-1412\jre\bin\javaw.exe. (17-Nov-2025, 3:33:42 pm - 3:35:22 pm elapsed: 0:01:40.234) [pid: 28956]  
Flight deleted successfully  
Yet Flights are not added to databases  
1.Add Flights  
2.View all Flights  
3.Search Flight by Flightnumber  
4.Update Flight  
5.Delete Flight  
6.Exit  
6  
Exisiting form the process.....GoodBye!!!!  
----- Have a Nice day!!!!-----
```