```java
/* StudentID: 1810111
 * Name: Yash Djson Dookun
 * Task: Airline reservations system- The program requests the user to type 1 for 'smoking
compartment' or 2 for 'non smoking compartment'.
The flight carries a maximum of 10 passengers. Seats in the range 1 to 5 are for
smoking section and seats in the range 6 to 10 are for non-smoking section. Thus, if
the user types 1, a seat is assigned in the smoking section, and if user types 2, a
seat is booked in the non-smoking section.
As each seat is assigned, you must record that it is no longer available so that a seat
cannot be assigned more than once. If there are no seats available, you may display
appropriate messages to the user. Terminate the program if all seats are booked.
Hint: Declare 2 arrays of 5 elements each to represent smoking and non-smoking.
Use a loop to fill all the 10 seats. The loop exits when all 10 seats are filled. You may
assign a value of 1 as a booked seat, and 0 as an available seat.*/

import java.util.Arrays;
import java.util.Scanner;

public class airline {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        String  smoking[] = {"f","f","f","f","f"};  // f = free seat
        String  non_smoking[] = {"f","f","f","f","f"};
        int choice; //either 1 or 2
        int i, counter_s = 0, counter_ns = 0, remaining_s = 5, remaining_ns = 5; // s=smoking  ns=non-smoking

        //Welcome Message
        System.out.println();
        System.out.println("+-------------------------------------------------------+");
        System.out.println("|                 Airline Reservation System            |");
        System.out.println("+-------------------------------------------------------+");
        System.out.println("| Kindly choose your seat compartment when prompted below.    |");
        System.out.println("|                                                       |");
        System.out.println("| Enter '1' if you want a seat in the Smoking compartment     |");
        System.out.println("| Enter '2' if you want a seat in the Non-Smoking compartment  |");
        System.out.println("+-------------------------------------------------------+");
        System.out.println();

        for (i=0; i < 10; i++) {
            //takes user input for the choice
            System.out.print("Enter here: ");
            choice = input.nextInt();
            if (choice == 2){
                System.out.println("Selected Compartment: Non-Smoking");
                for (int j=0; j < non_smoking.length; j++) {
                    //verify for free seats in non-smoking compartment
                    if (non_smoking[j] == "f") {
                        break;
                    }
                }
                non_smoking[counter_ns] = "b"; // changes f(free seat) to b(booked seat)
                counter_ns++;
                remaining_ns--;
                System.out.println(Arrays.toString(non_smoking)); //prints the seats of Non-Smoking compartment
                System.out.println("Remaining seats in Non-Smoking Compartment: " + remaining_ns); //states number of free seats
                System.out.println();
                if (remaining_ns == 0 && remaining_s != 0) {
                    System.out.println("No more seats available, please choose Smoking Compartment only as from here!");
                    System.out.println();
                }
                else if (remaining_ns == 0 && remaining_s == 0 ) {
                    System.out.println("NO MORE FREE SEATS!");
                    System.out.println();
                }
            }
            else if (choice == 1) {
                System.out.println("Selected Compartment: Smoking");
                for (int j=0; j < smoking.length; j++) {
                    //verify for free seats in smoking compartment
                    if (smoking[j] == "f") {
                        break;
                    }
                }
                smoking[counter_s] = "b"; // changes f(free seat) to b(booked seat)
                counter_s++;
                remaining_s--;
                System.out.println(Arrays.toString(smoking)); //prints the seats of Smoking compartment
                System.out.println("Remaining seats in the Smoking compartment: " + remaining_s); //states number of free seats
                System.out.println();
                if (remaining_s == 0 && remaining_ns !=0) {
                    System.out.println("No more seats available, please choose Non-Smoking Compartment only as from here!");
                    System.out.println();
                }
                else if (remaining_s == 0 && remaining_ns == 0) {
                    System.out.println("NO MORE FREE SEATS!");
                    System.out.println();
                }
            }
            else{
                //cater for wrong user choice
                System.out.println("Invalid Choice! Kindly choose between 0 and 1 only!");
                System.out.println();
                i--; //allows for additional user input to make sure all 10 seats are booked
            }
        }
        input.close();
    }
}
```
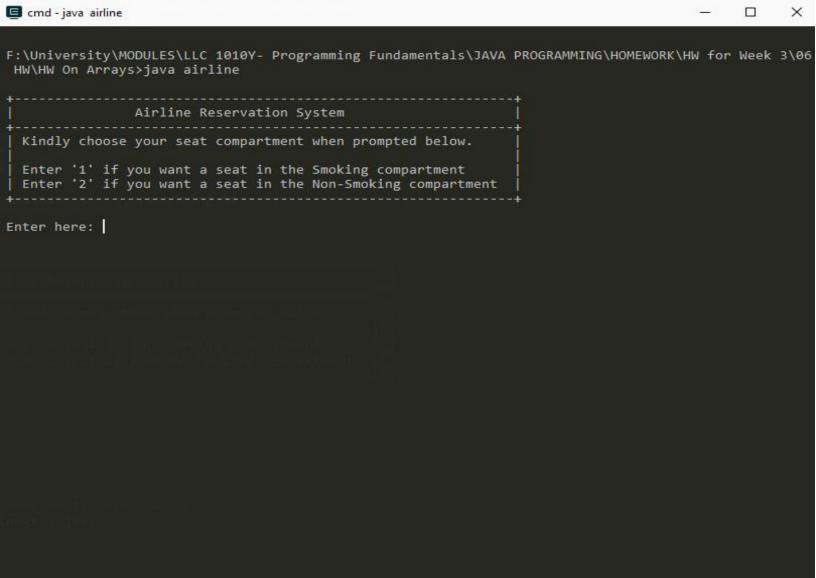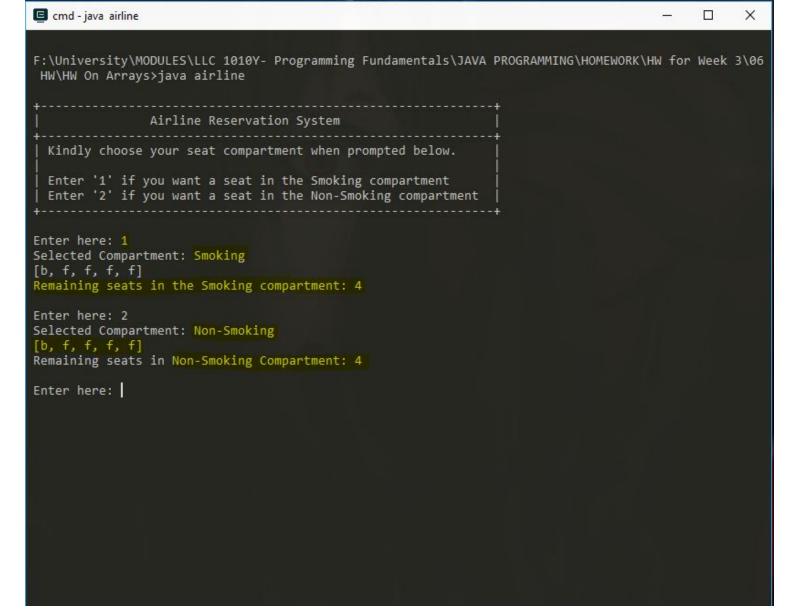
```
F:\University\MODULES\LLC 1010Y- Programming Fundamentals\JAVA PROGRAMMING\HOMEWORK\HW for Week 3\06
 HW\HW On Arrays>java airline
+-------------------------------------------------------+
|               Airline Reservation System              |
+-------------------------------------------------------+
| Kindly choose your seat compartment when prompted below. |
|                                                       |
| Enter '1' if you want a seat in the Smoking compartment   |
| Enter '2' if you want a seat in the Non-Smoking compartment |
+-------------------------------------------------------+

Enter here: |
```

➜ The Welcome Screen when the Program is executed
➜ The user inputs his choice (1/2) when prompted

```
cmd - java airline                                                 —  ☐  ✕

F:\University\MODULES\LLC 1010Y- Programming Fundamentals\JAVA PROGRAMMING\HOMEWORK\HW for Week 3\06
 HW\HW On Arrays>java airline

+-------------------------------------------------------+
|                Airline Reservation System             |
+-------------------------------------------------------+
| Kindly choose your seat compartment when prompted below. |
|                                                       |
| Enter '1' if you want a seat in the Smoking compartment    |
| Enter '2' if you want a seat in the Non-Smoking compartment |
+-------------------------------------------------------+

Enter here: 1
Selected Compartment: Smoking
[b, f, f, f, f]
Remaining seats in the Smoking compartment: 4

Enter here: 2
Selected Compartment: Non-Smoking
[b, f, f, f, f]
Remaining seats in Non-Smoking Compartment: 4

Enter here: |
```

➔ Free seats are represented by 'f'
➔ Booked seats are represented by 'b'
➔ By default, all the seats (in both compartments) are marked as free seats (i.e, f)
➔ When a user chooses a compartment, a 'free' seat is updated to 'booked'
➔ The current booked and free seats are printed
➔ And the number of remaining free seats is shown

```
cmd - java airline                                              —    □    ✕

Enter here: 2
Selected Compartment: Non-Smoking
[b, f, f, f, f]
Remaining seats in Non-Smoking Compartment: 4

Enter here: 1
Selected Compartment: Smoking
[b, b, f, f, f]
Remaining seats in the Smoking compartment: 3

Enter here: 1
Selected Compartment: Smoking
[b, b, b, f, f]
Remaining seats in the Smoking compartment: 2

Enter here: 2
Selected Compartment: Non-Smoking
[b, b, f, f, f]
Remaining seats in Non-Smoking Compartment: 3

Enter here: 1
Selected Compartment: Smoking
[b, b, b, b, f]
Remaining seats in the Smoking compartment: 1

Enter here: 2
Selected Compartment: Non-Smoking
[b, b, b, f, f]
Remaining seats in Non-Smoking Compartment: 2

Enter here: 1
Selected Compartment: Smoking
[b, b, b, b, b]
Remaining seats in the Smoking compartment: 0

No more seats available, please choose Non-Smoking Compartment only as from here!

Enter here: |

java.exe                                           Search        🔍 ➕ ▾ ▢ ▾ 🔒 ▢ ☰
```
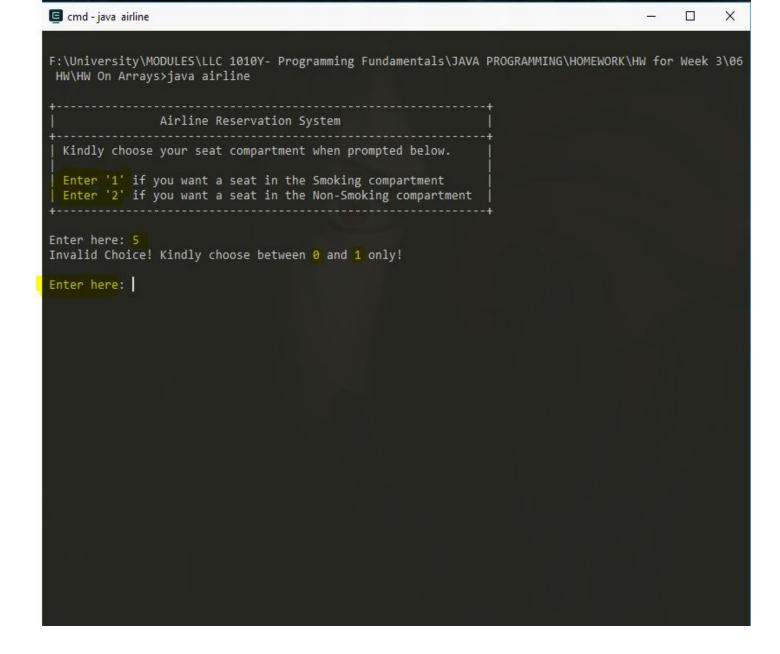
➔ As the user inputs choices, the updated array of seats is displayed and the number of free seats is shown

➔ If the **Smoking** Compartment is fully booked, the program checks if the are free seats in the **non-smoking** Compartment

➔ If yes, the user is prompted to only choose *Non-Smoking* as from here on

```
E  cmd - java airline                                                    —   □   ✕

|                   Airline Reservation System                   |
+----------------------------------------------------------------+
| Kindly choose your seat compartment when prompted below.       |
|                                                                |
| Enter '1' if you want a seat in the Smoking compartment        |
| Enter '2' if you want a seat in the Non-Smoking compartment    |
+----------------------------------------------------------------+

Enter here: 5
Invalid Choice! Kindly choose between 0 and 1 only!

Enter here: 2
Selected Compartment: Non-Smoking
[b, f, f, f, f]
Remaining seats in Non-Smoking Compartment: 4

Enter here: 2
Selected Compartment: Non-Smoking
[b, b, f, f, f]
Remaining seats in Non-Smoking Compartment: 3

Enter here: 2
Selected Compartment: Non-Smoking
[b, b, b, f, f]
Remaining seats in Non-Smoking Compartment: 2

Enter here: 2
Selected Compartment: Non-Smoking
[b, b, b, b, f]
Remaining seats in Non-Smoking Compartment: 1

Enter here: 2
Selected Compartment: Non-Smoking
[b, b, b, b, b]
Remaining seats in Non-Smoking Compartment: 0

No more seats available, please choose Smoking Compartment only as from here!

Enter here: █
```

➔ Same goes for the opposite; should the **Non-Smoking** compartment be fully booked, the program checks for free seats in the **Smoking** compartment and asks the user to book there!

```
cmd                                                                    —    □    X

Remaining seats in the Smoking compartment: 2

Enter here: 2
Selected Compartment: Non-Smoking
[b, b, f, f, f]
Remaining seats in Non-Smoking Compartment: 3

Enter here: 1
Selected Compartment: Smoking
[b, b, b, b, f]
Remaining seats in the Smoking compartment: 1

Enter here: 2
Selected Compartment: Non-Smoking
[b, b, b, f, f]
Remaining seats in Non-Smoking Compartment: 2

Enter here: 1
Selected Compartment: Smoking
[b, b, b, b, b]
Remaining seats in the Smoking compartment: 0

No more seats available, please choose Non-Smoking Compartment only as from here!

Enter here: 2
Selected Compartment: Non-Smoking
[b, b, b, b, f]
Remaining seats in Non-Smoking Compartment: 1

Enter here: 2
Selected Compartment: Non-Smoking
[b, b, b, b, b]
Remaining seats in Non-Smoking Compartment: 0

NO MORE FREE SEATS!


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 HW\HW On Arrays>
```

➔ If the program reaches the point where all the 10 slots have been booked (5 in Smoking + 5 in Non-Smoking), the Program gets terminated with a "No more free seats!" message!

➔ The program cross checked in both compartments first before reaching to the conclusion that there are indeed no seats available.

```
cmd - java airline                                                    —    □    X

F:\University\MODULES\LLC 1010Y- Programming Fundamentals\JAVA PROGRAMMING\HOMEWORK\HW for Week 3\06
 HW\HW On Arrays>java airline

+-------------------------------------------------------+
|                 Airline Reservation System            |
+-------------------------------------------------------+
| Kindly choose your seat compartment when prompted below. |
|                                                       |
| Enter '1' if you want a seat in the Smoking compartment     |
| Enter '2' if you want a seat in the Non-Smoking compartment |
+-------------------------------------------------------+

Enter here: 5
Invalid Choice! Kindly choose between 0 and 1 only!

Enter here: |
```

➔ If the user enters a value other than 1 or 2, the program will inform him/her and prompt him/her to retry.

➔ The program will iterate the User input step as long as the user doesn't input 1 or 2 or until all the 10 seats are not booked.