A2: Find the second maximum and second minimum in a set of numbers using auto boxing and unboxing.

Refer any one method.

Method 1: Using TreeSet

```
import java.util.Scanner;

import java.util.TreeSet;


public class A2 {

  public static void main(String[] args) {

    TreeSet<Integer> number=new TreeSet<Integer> ();

    Scanner sc=new Scanner(System.in);

    int n,secLarge,secSmall,large,small;

    System.out.println("Enter N: ");

    n=sc.nextInt();


    if(n<3){

      System.out.println("N should be greater than 2");

      return;

    }


    System.out.printf("Enter %d elements: ",n);

    for(int i=0;i<n;i++)

      number.add(sc.nextInt());


    large=number.last();

    small=number.first();

    secLarge=number.lower(large);

    secSmall=number.higher(small);
```

```java
        System.out.printf("Second Highest: %d\nSecond Least: %d\n",secLarge,secSmall);

    }
}
```

Method2: Using ArrayList and Collections

```java
import java.util.ArrayList;

import java.util.Collections;

import java.util.Scanner;


public class A2{
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter number of elements: ");
        int n=sc.nextInt();
        if(n<3){
            System.out.println("Number of elements should be greater than or equal to 3");
            return;
        }
        ArrayList<Integer> numbers= ArrayList<Integer> ();
        System.out.printf("Enter %d elements: ",n);
        for(int i=0;i<n;i++)
            numbers.add(sc.nextInt());

        Integer max,min;
        max=Collections.max(numbers); //It will finds max element in list
        min=Collections.min(numbers);
        numbers.remove(max); //it will remove that max element from the list
        numbers.remove(min);
```

```java
        max=Collections.max(numbers); //after removing max element, if I again do max, il
//get second max.

        min=Collections.min(numbers);

        System.out.printf("Second Max: %d\nSecond Min: %d\n",max,min);

    }

}
```

Method3: From the scratch

```java
import java.util.Scanner;


public class A2 {
    public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter number of elements(N>2): ");
        int n=sc.nextInt();
        Integer[] numbers=new Integer[n];
        System.out.printf("Enter %d elements: ",n);
        for(int i=0;i<n;i++)
            numbers[i]=sc.nextInt();


        int max=Integer.MIN_VALUE,min=Integer.MAX_VALUE,secMax=max,secMin=min;
        for(Integer num:numbers){
            if(num>max){
                secMax=max;
                max=num;
            }else if (num > secMax && num != max) {
                secMax = num;
            }
```

```java
            if(num<min){

                secMin=min;

                min=num;

            }else if (num < secMin && num != min) {

                secMin = num;

            }

        }


        System.out.printf("Max: %d\tSecond Max: %d\nMin: %d\tSecond Min:
%d\n",max,secMax,min,secMin);

    }

}
```