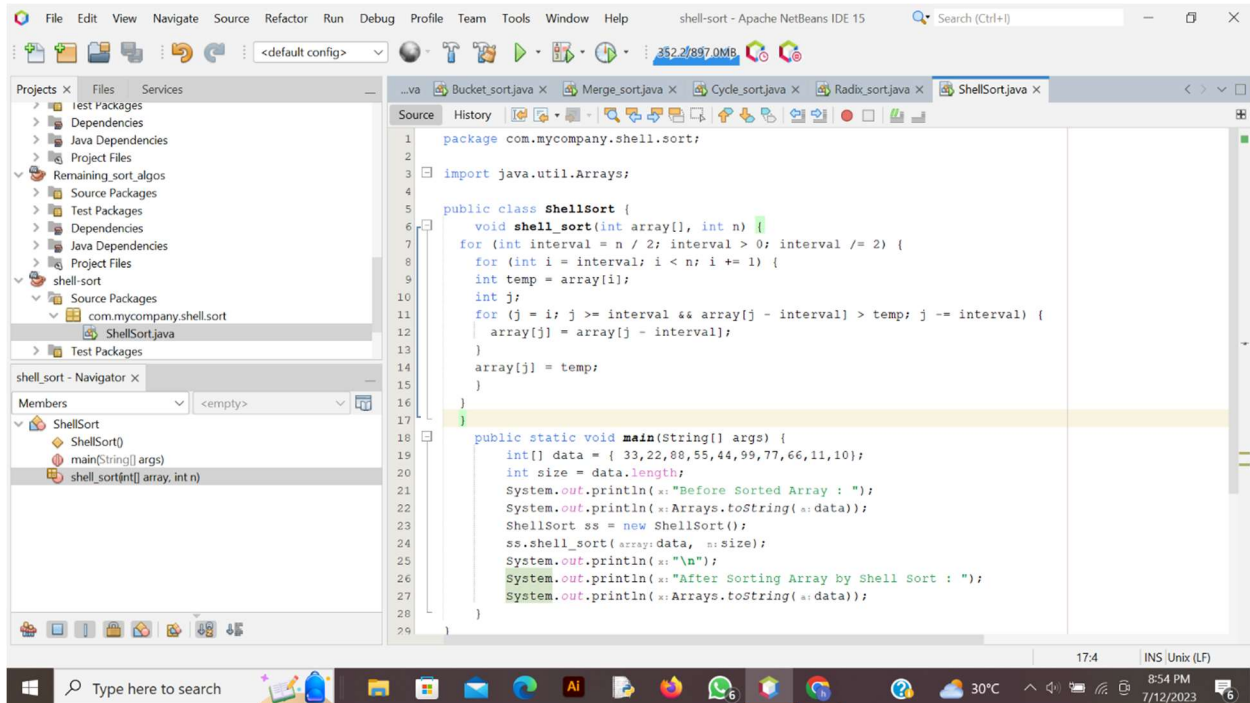
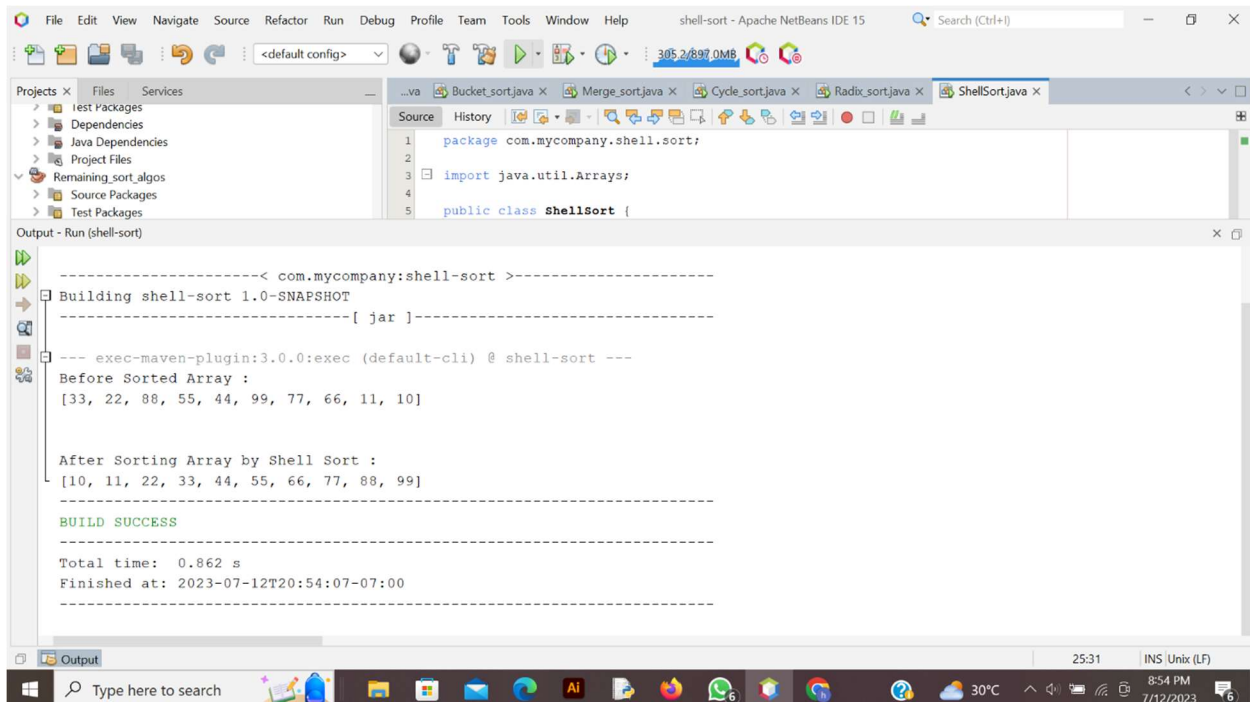


Today's Task (Tic Tac Toe)

Shell Sort



```
1 package com.mycompany.shell.sort;
2
3 import java.util.Arrays;
4
5 public class ShellSort {
6     void shell_sort(int array[], int n) {
7         for (int interval = n / 2; interval > 0; interval /= 2) {
8             for (int i = interval; i < n; i += 1) {
9                 int temp = array[i];
10                int j;
11                for (j = i; j >= interval && array[j - interval] > temp; j -= interval) {
12                    array[j] = array[j - interval];
13                }
14                array[j] = temp;
15            }
16        }
17    }
18
19    public static void main(String[] args) {
20        int[] data = { 33, 22, 88, 55, 44, 99, 77, 66, 11, 10};
21        int size = data.length;
22        System.out.println("Before Sorted Array : ");
23        System.out.println(Arrays.toString(data));
24        ShellSort ss = new ShellSort();
25        ss.shell_sort(data, size);
26        System.out.println("\n");
27        System.out.println("After Sorting Array by Shell Sort : ");
28        System.out.println(Arrays.toString(data));
29    }
30 }
```



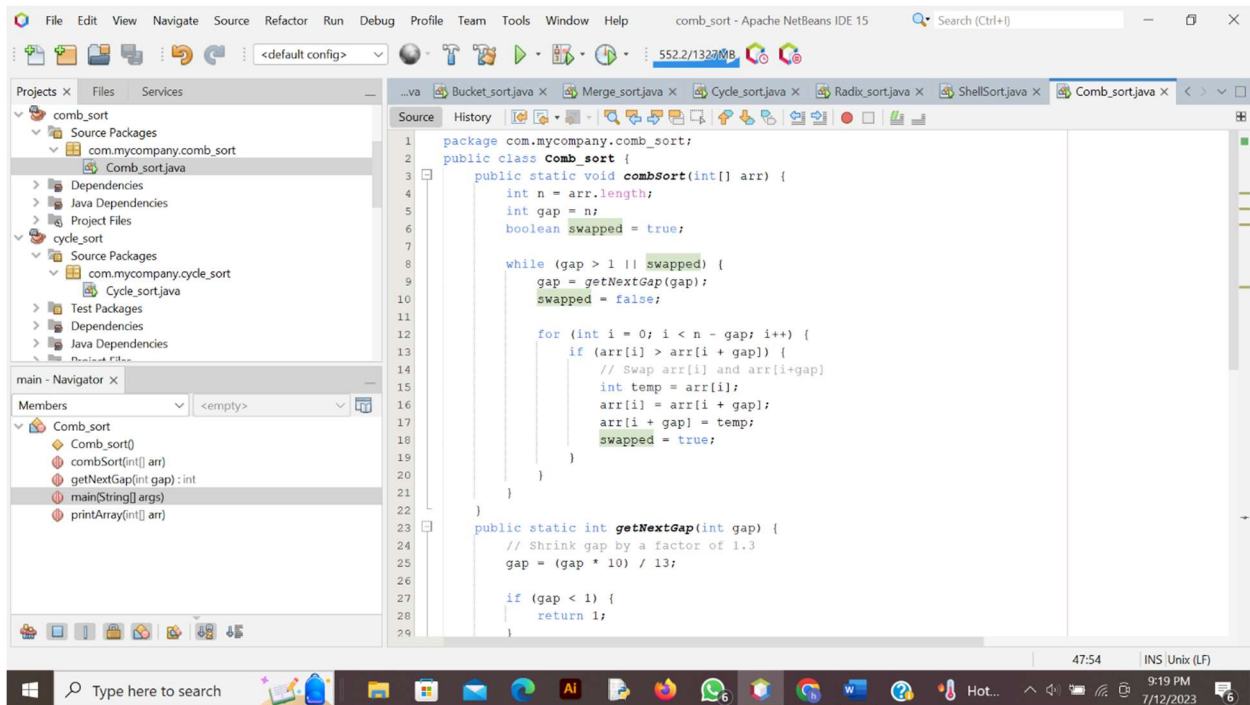
```
-----< com.mycompany:shell-sort >-----
Building shell-sort 1.0-SNAPSHOT
-----[ jar ]-----
--- exec-maven-plugin:3.0.0:exec (default-cli) @ shell-sort ---
Before Sorted Array :
[33, 22, 88, 55, 44, 99, 77, 66, 11, 10]

After Sorting Array by Shell Sort :
[10, 11, 22, 33, 44, 55, 66, 77, 88, 99]

BUILD SUCCESS

Total time: 0.862 s
Finished at: 2023-07-12T20:54:07-07:00
-----
```

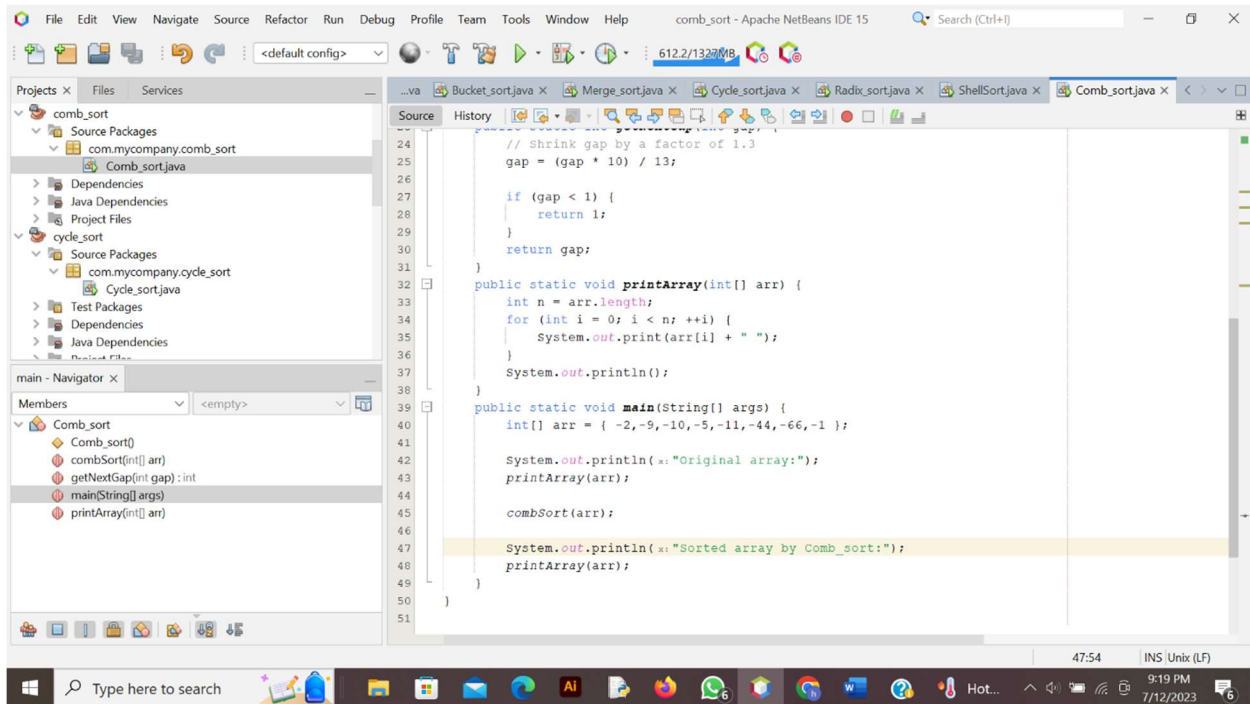
Comb Sort



The screenshot shows the Apache NetBeans IDE with the following components:

- Projects View:** A project named 'comb_sort' is shown, containing source packages 'com.mycompany.comb_sort' and 'com.mycompany.cycle_sort'. The 'main' navigator shows the 'Members' of the 'Comb_sort' package, including 'Comb_sort', 'combSort(int[] arr)', 'getNextGap(int gap): int', 'main(String[] args)', and 'printArray(int[] arr)'.
- Source View:** The 'Comb_sort.java' file is open, showing the following code:

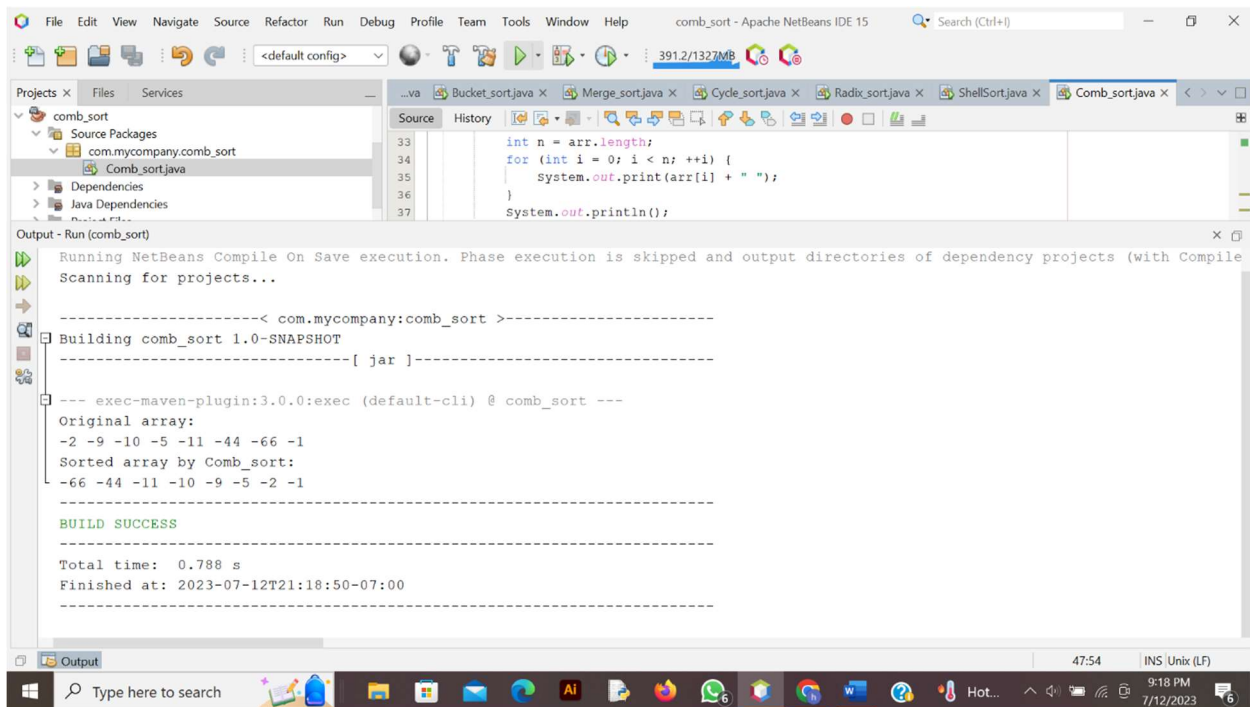
```
1 package com.mycompany.comb_sort;
2 public class Comb_sort {
3     public static void combSort(int[] arr) {
4         int n = arr.length;
5         int gap = n;
6         boolean swapped = true;
7
8         while (gap > 1 || swapped) {
9             gap = getNextGap(gap);
10            swapped = false;
11
12            for (int i = 0; i < n - gap; i++) {
13                if (arr[i] > arr[i + gap]) {
14                    // Swap arr[i] and arr[i+gap]
15                    int temp = arr[i];
16                    arr[i] = arr[i + gap];
17                    arr[i + gap] = temp;
18                    swapped = true;
19                }
20            }
21        }
22
23        public static int getNextGap(int gap) {
24            // Shrink gap by a factor of 1.3
25            gap = (gap * 10) / 13;
26
27            if (gap < 1) {
28                return 1;
29            }
30        }
31    }
32 }
```



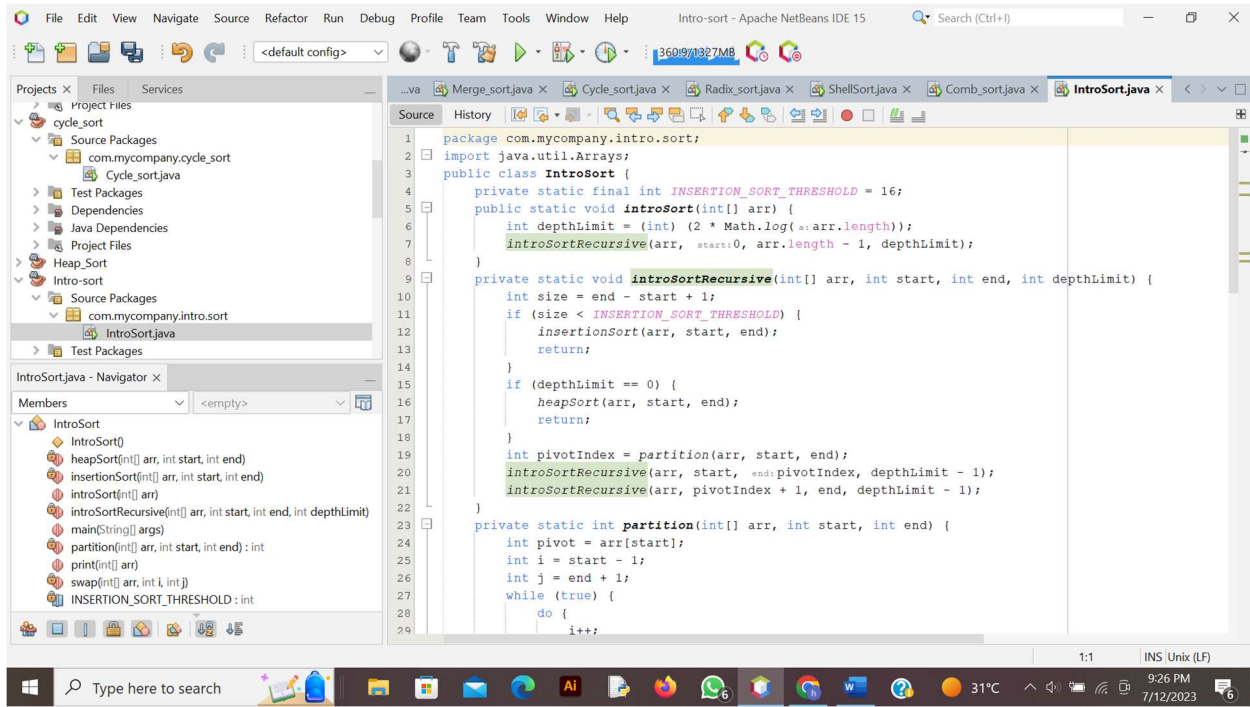
The screenshot shows the Apache NetBeans IDE with the following components:

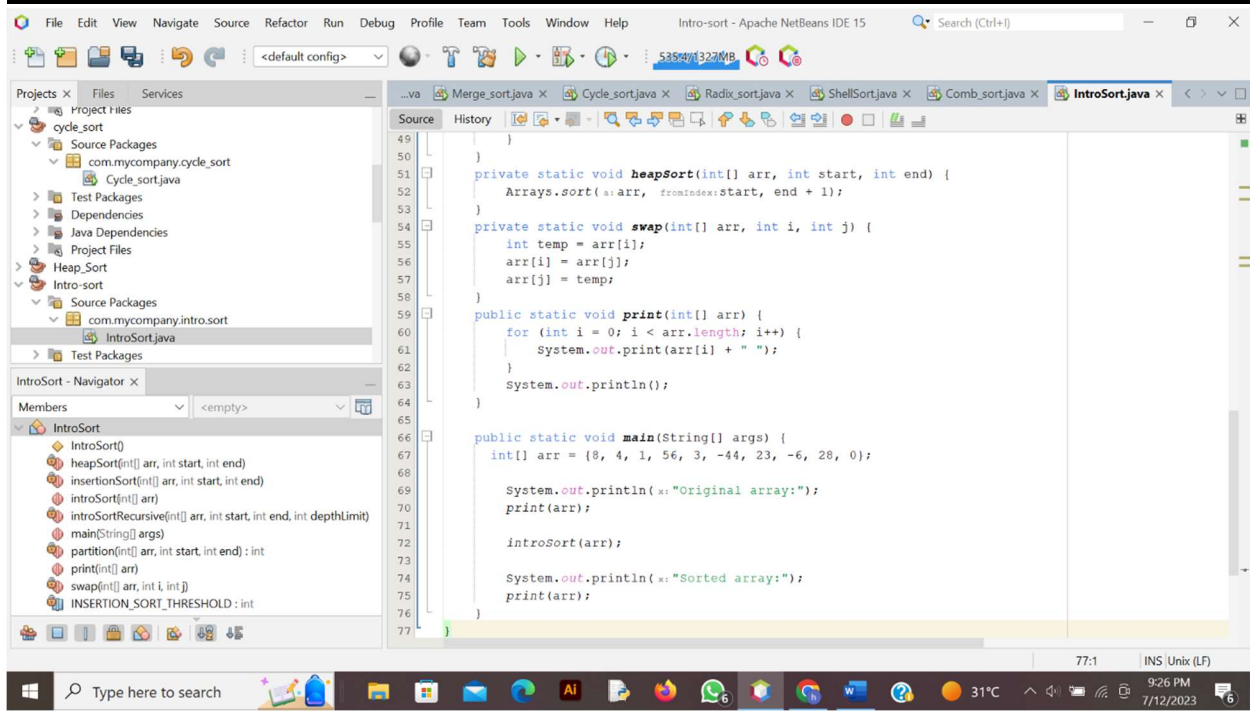
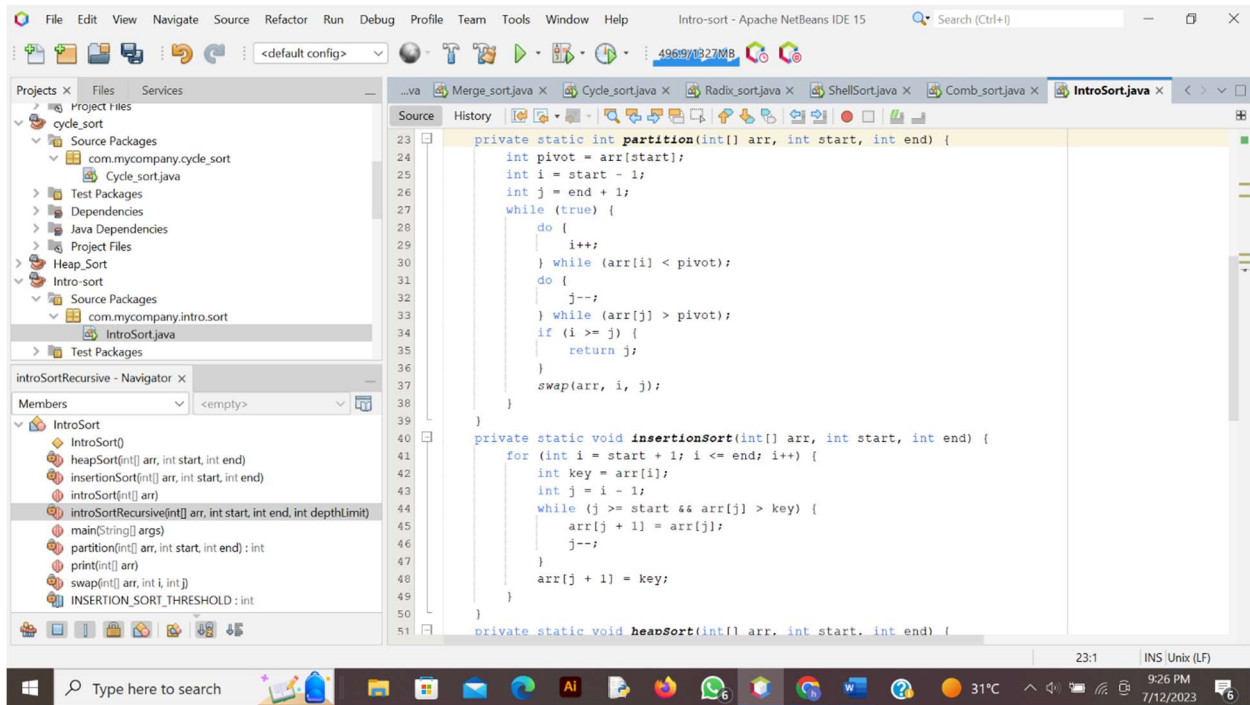
- Projects View:** The same 'comb_sort' project is shown, with the 'main' navigator showing the 'Members' of the 'Comb_sort' package, including 'Comb_sort', 'combSort(int[] arr)', 'getNextGap(int gap): int', 'main(String[] args)', and 'printArray(int[] arr)'.
- Source View:** The 'Comb_sort.java' file is open, showing the following code:

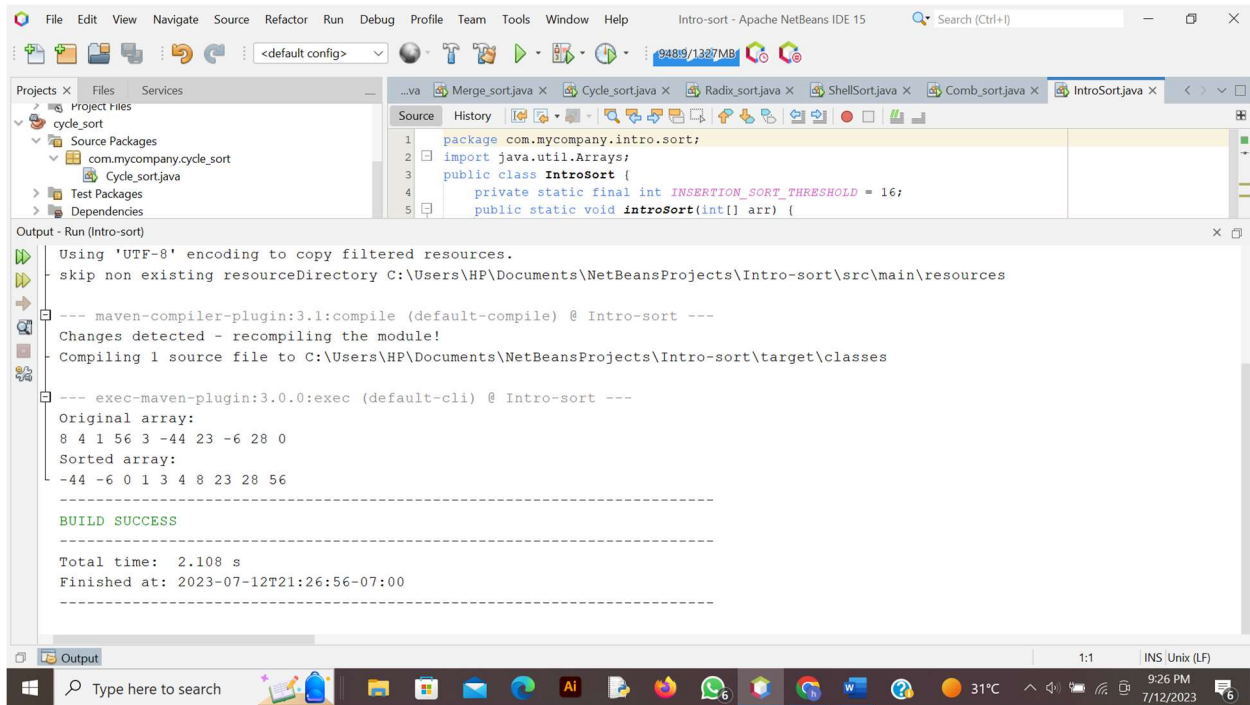
```
24 // Shrink gap by a factor of 1.3
25 gap = (gap * 10) / 13;
26
27 if (gap < 1) {
28     return 1;
29 }
30 return gap;
31
32 public static void printArray(int[] arr) {
33     int n = arr.length;
34     for (int i = 0; i < n; ++i) {
35         System.out.print(arr[i] + " ");
36     }
37     System.out.println();
38 }
39
40 public static void main(String[] args) {
41     int[] arr = { -2, -9, -10, -5, -11, -44, -66, -1 };
42
43     System.out.println("Original array:");
44     printArray(arr);
45
46     combSort(arr);
47
48     System.out.println("Sorted array by Comb_sort:");
49     printArray(arr);
50 }
51 }
```



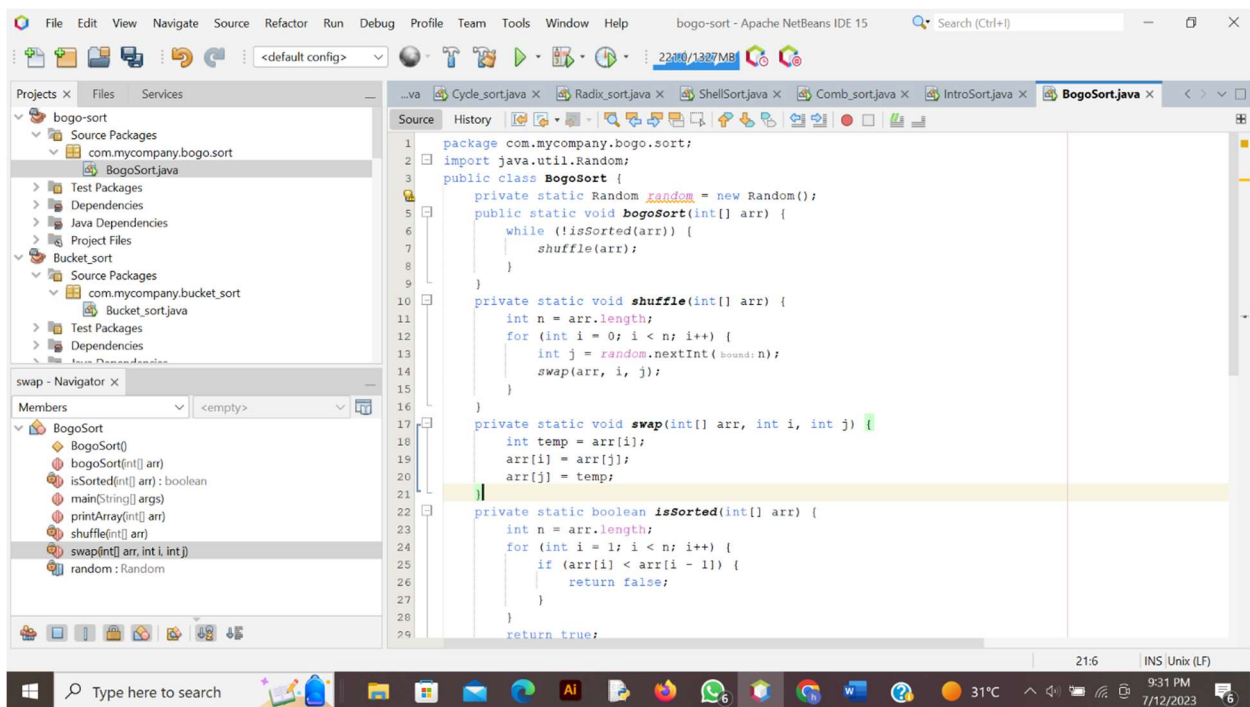
Intro Sort

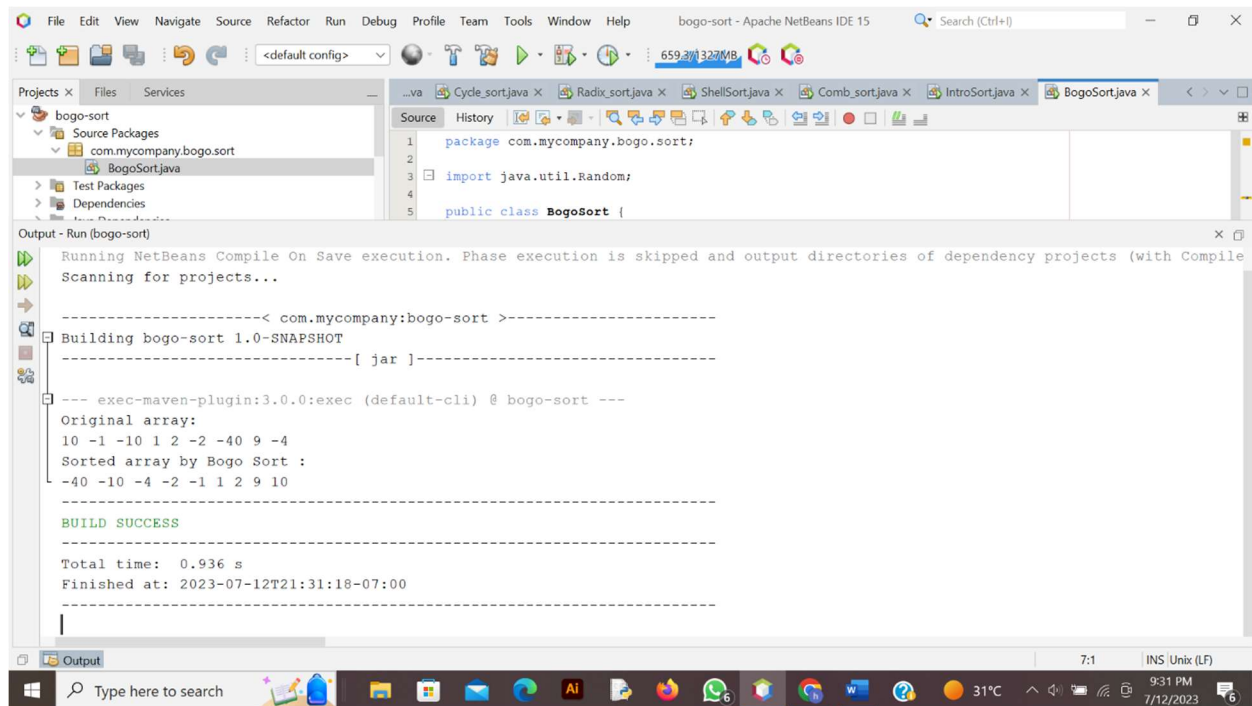
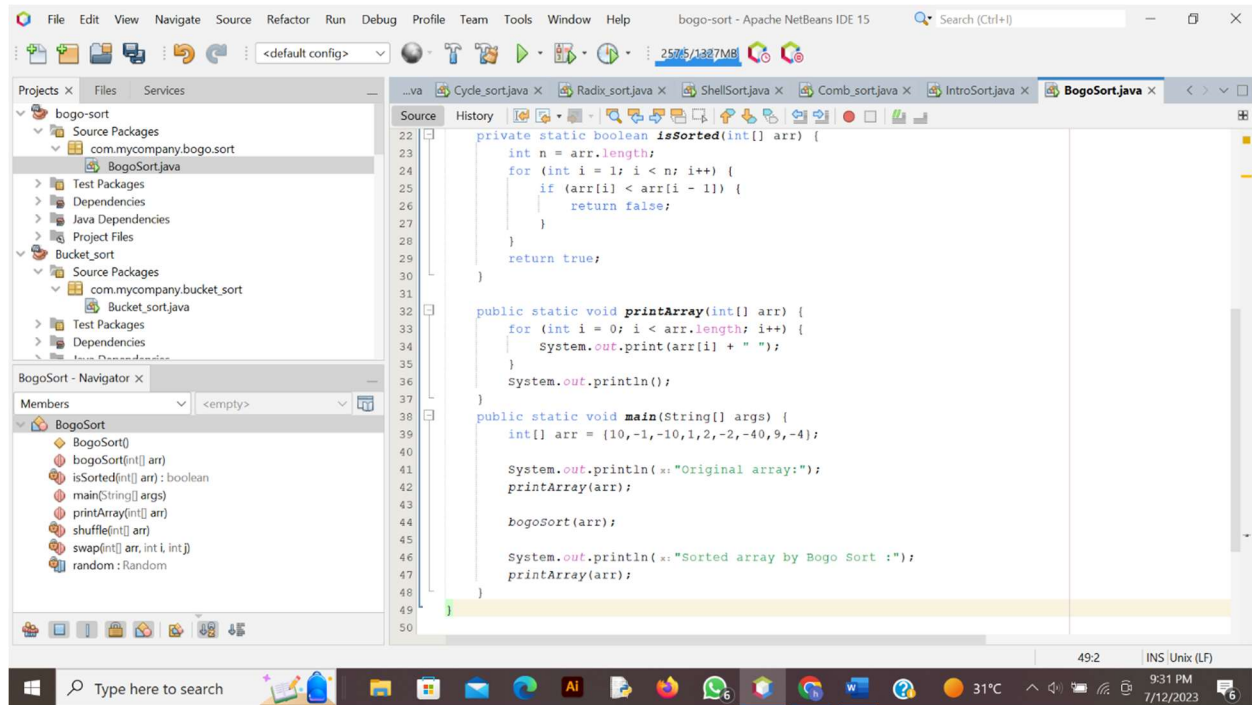




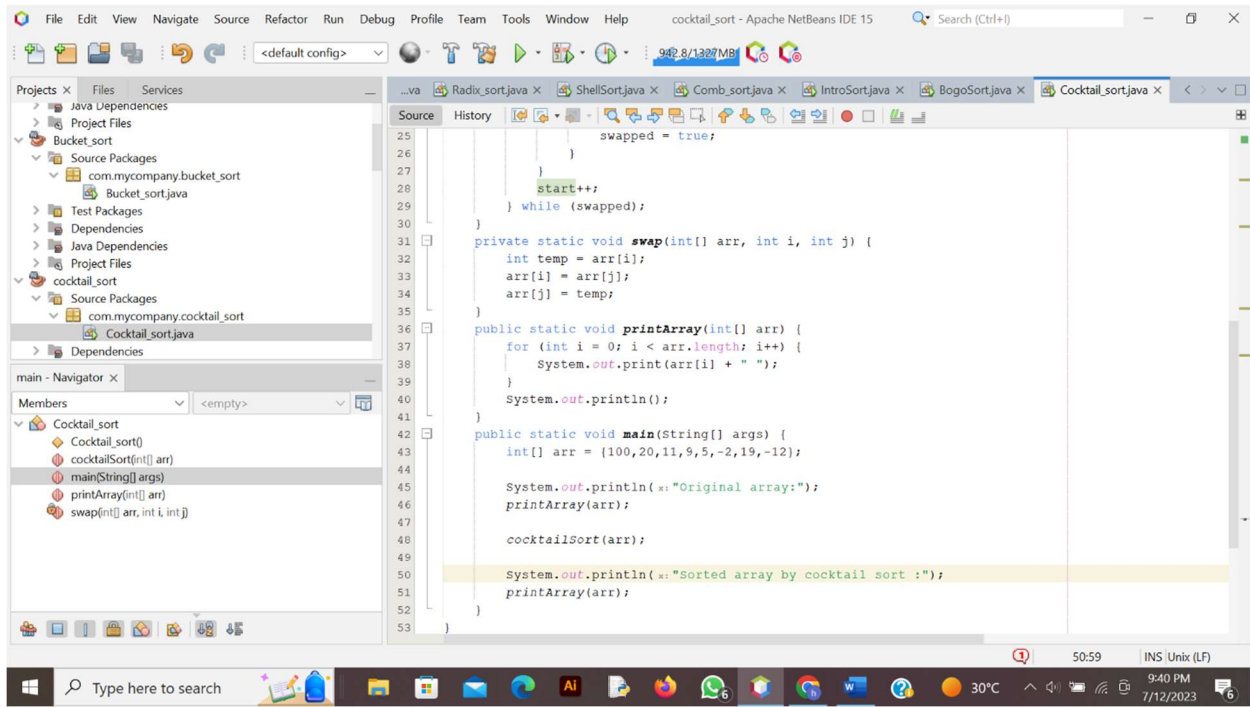
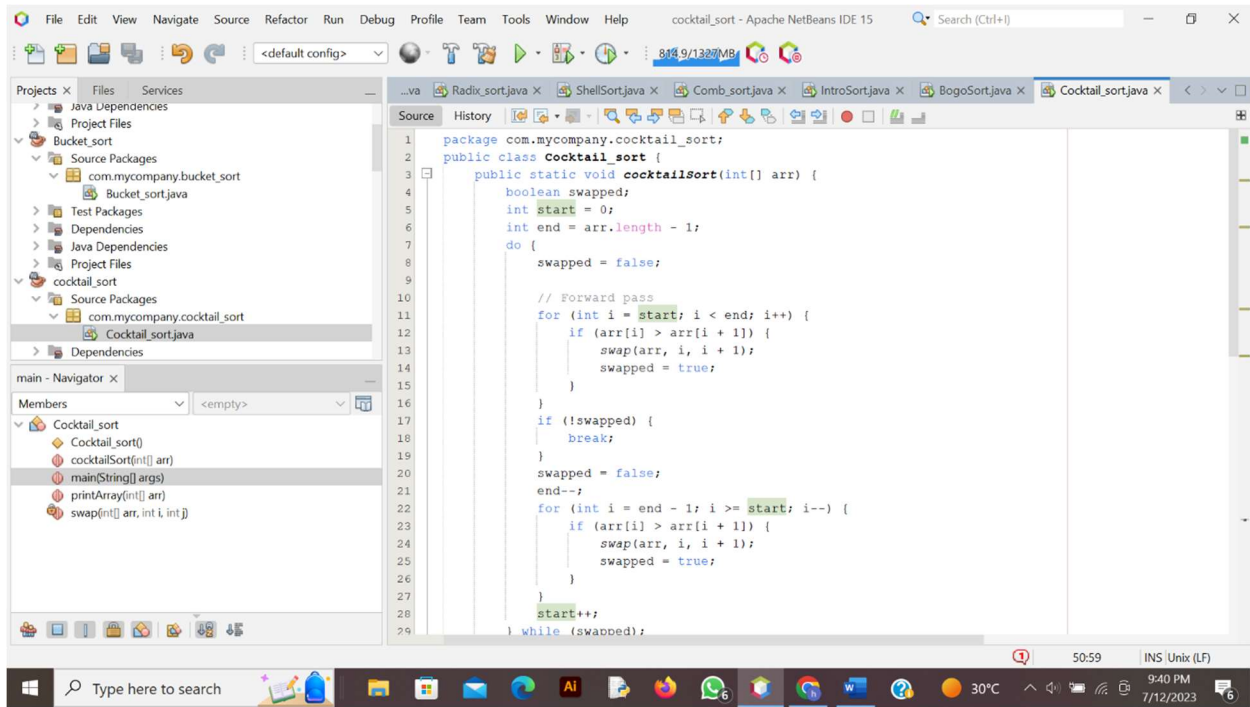


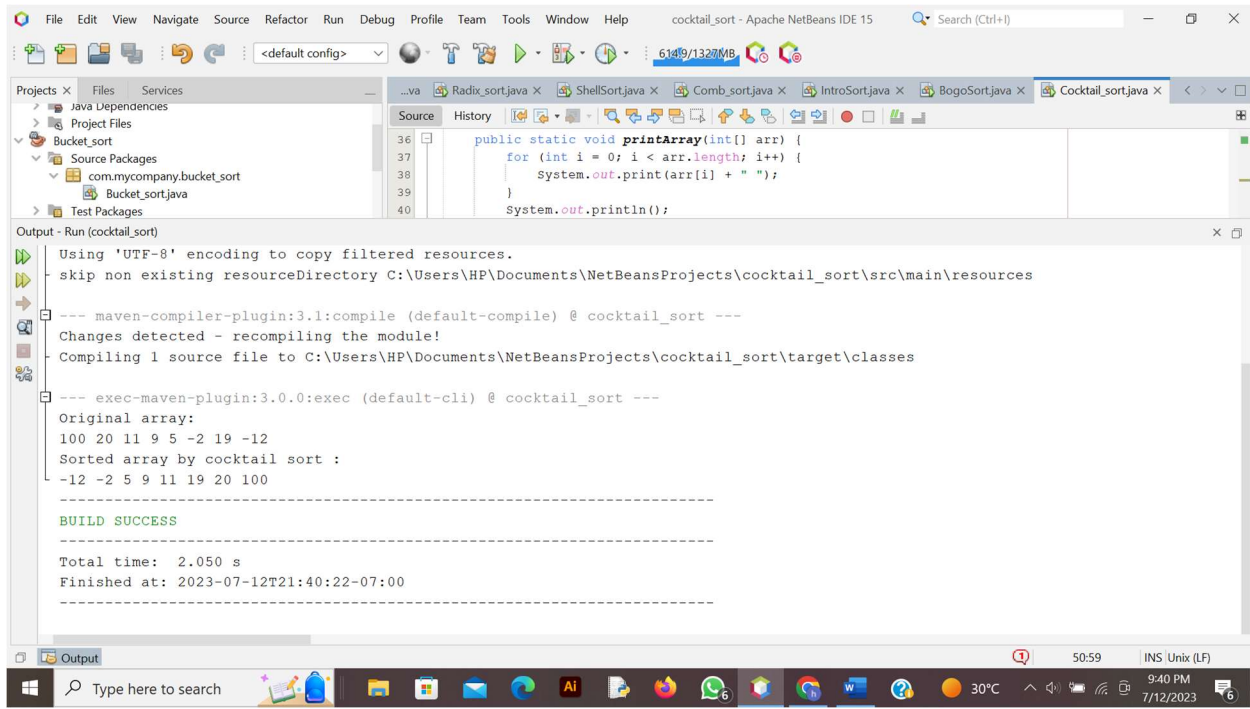
Bogo Sort



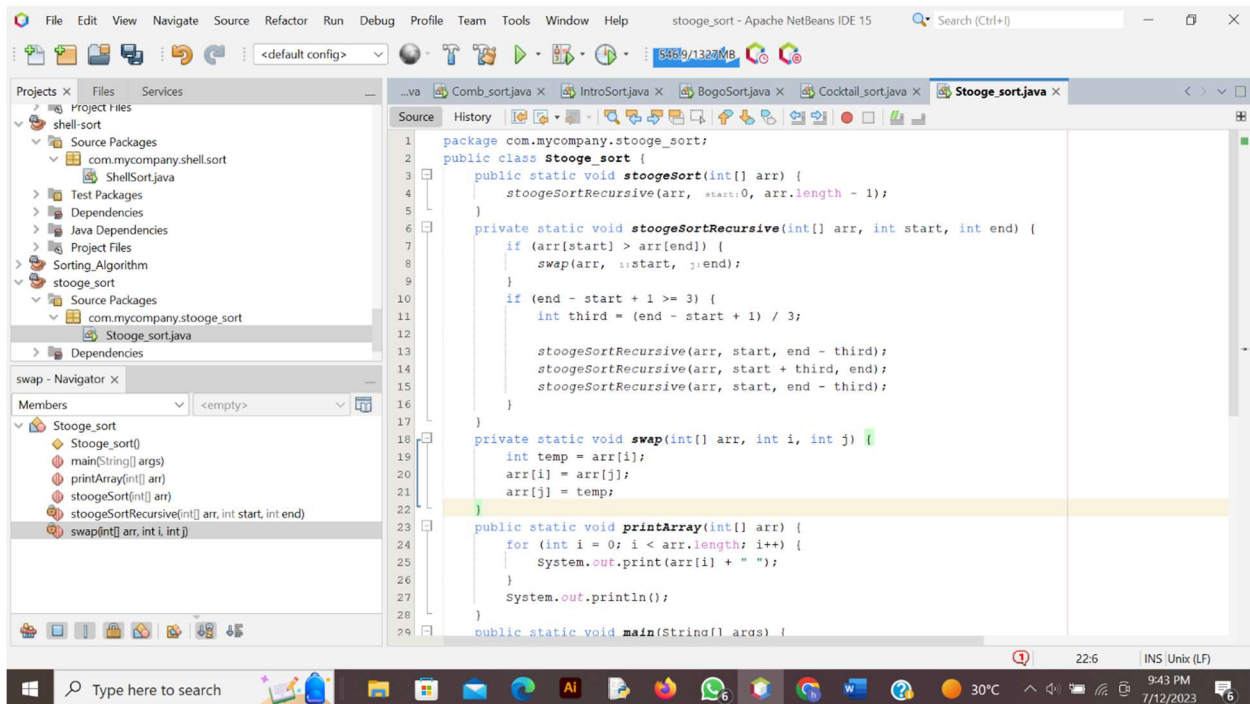


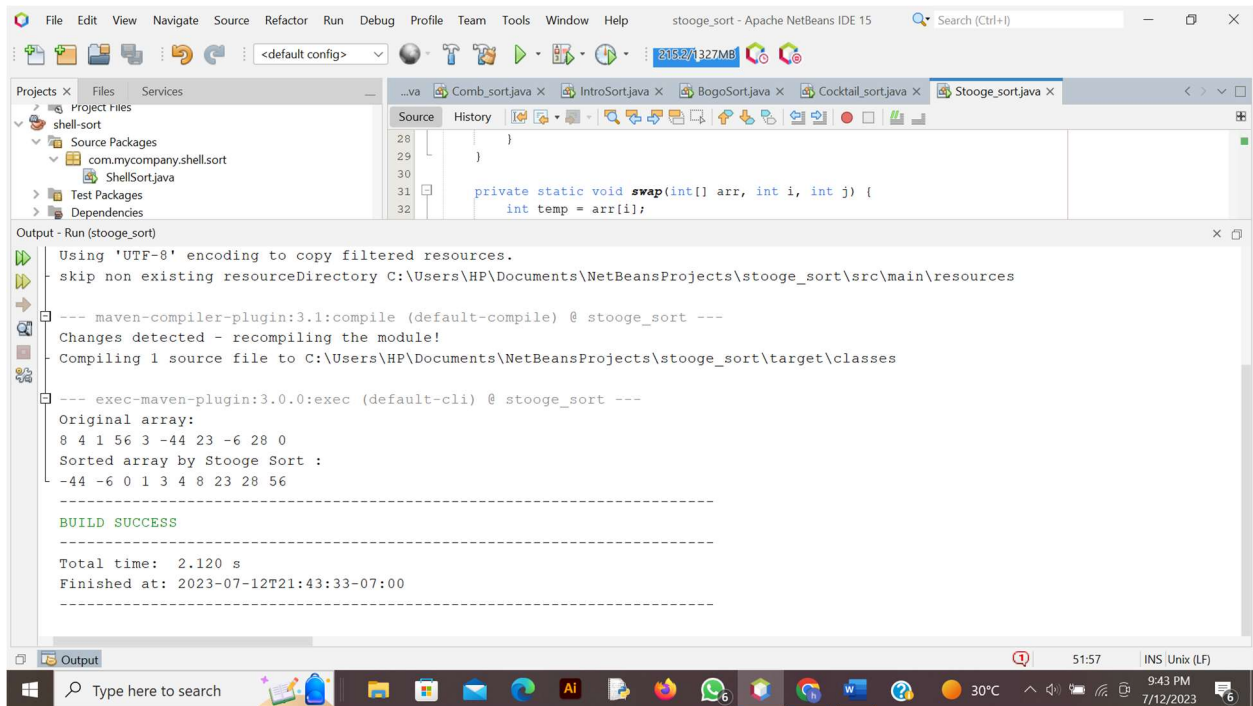
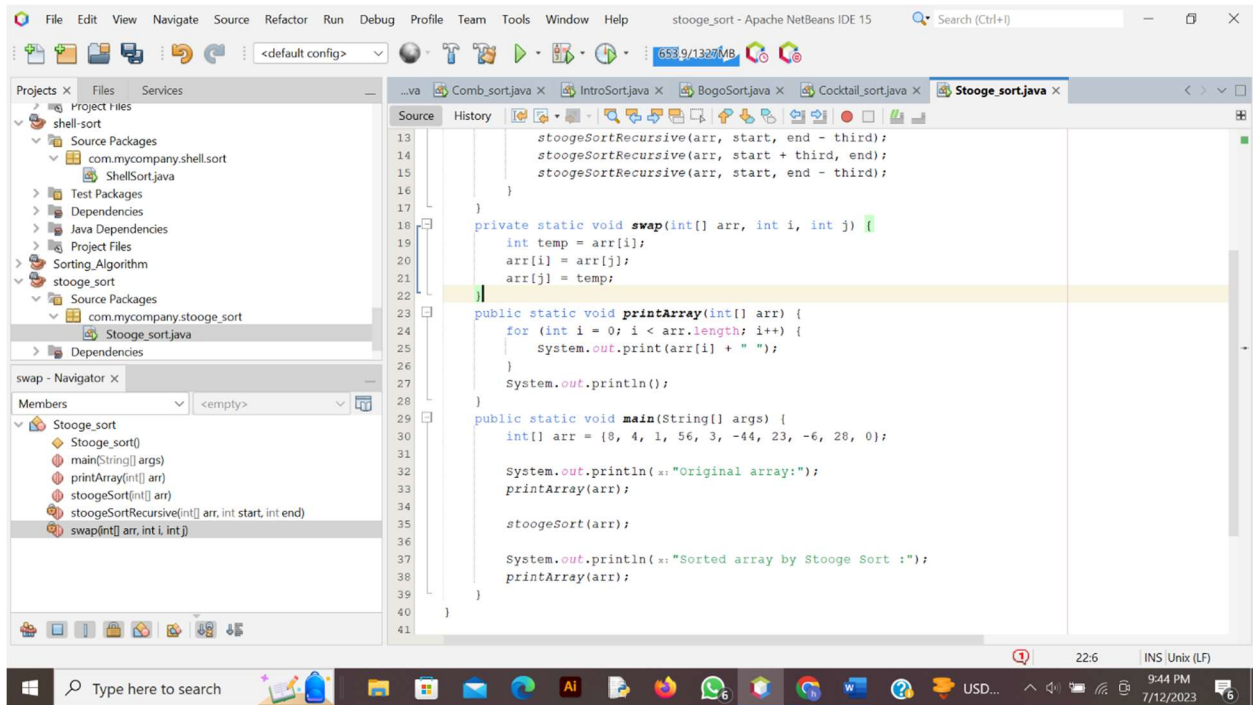
Cocktail Sort



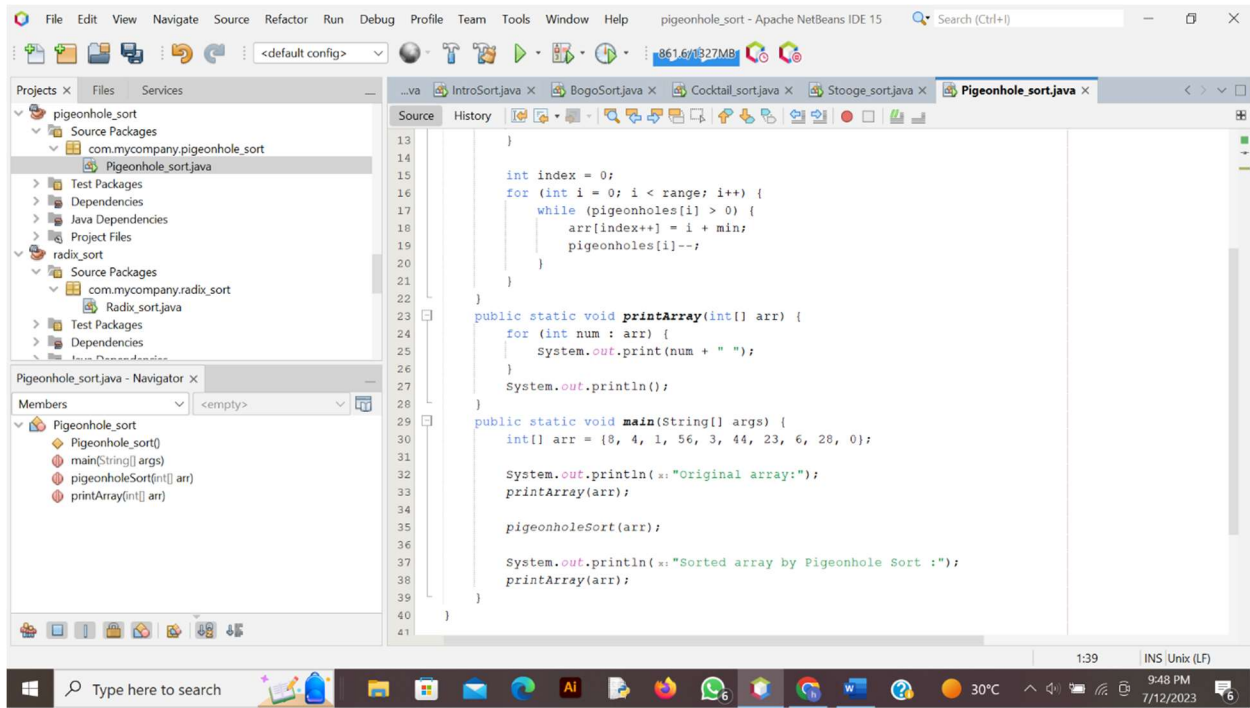
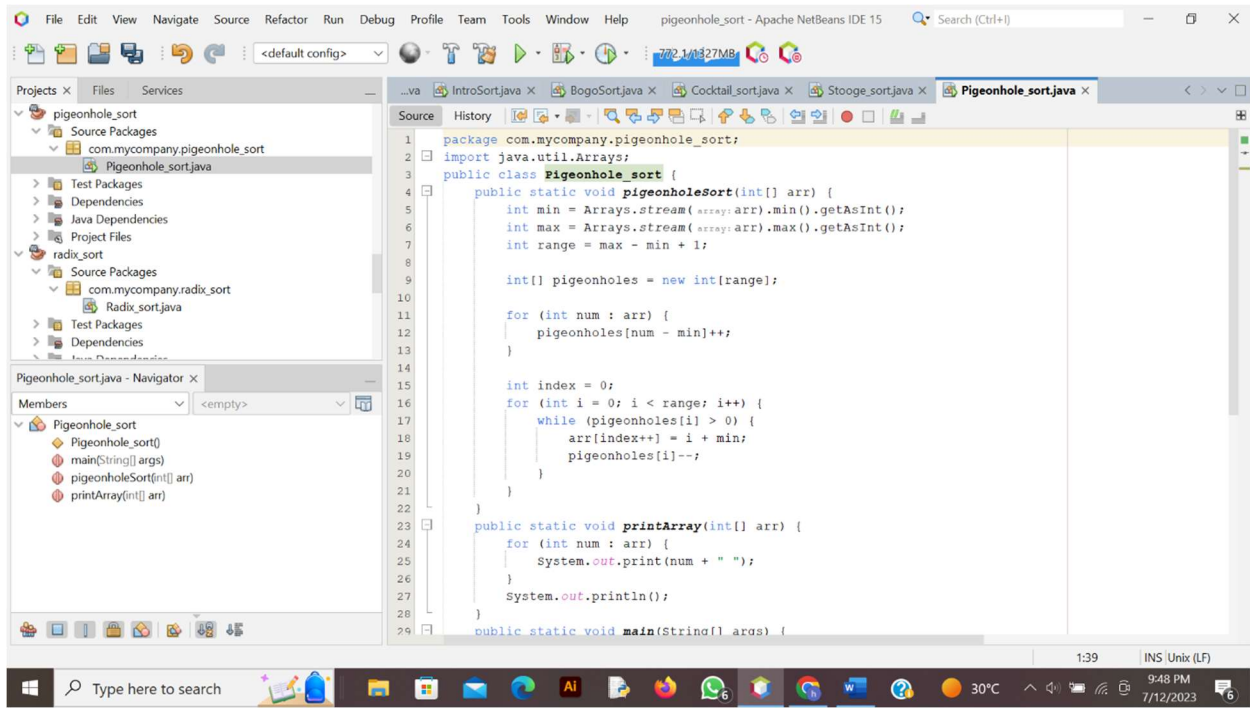


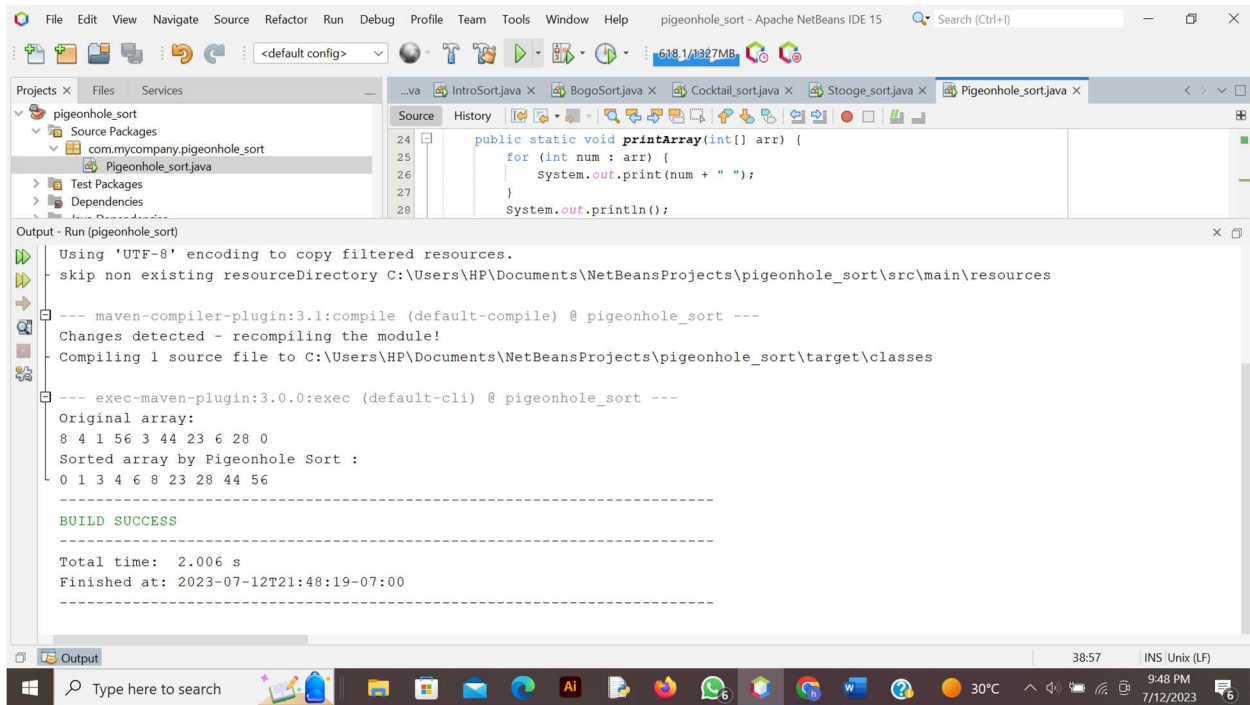
Stooge Sort





Pigeonhole Sort





Strand Sort

