Nama : Ferza Reyaldi
Kelas : 2 TI Reguler A
NIM   : 09021281924060

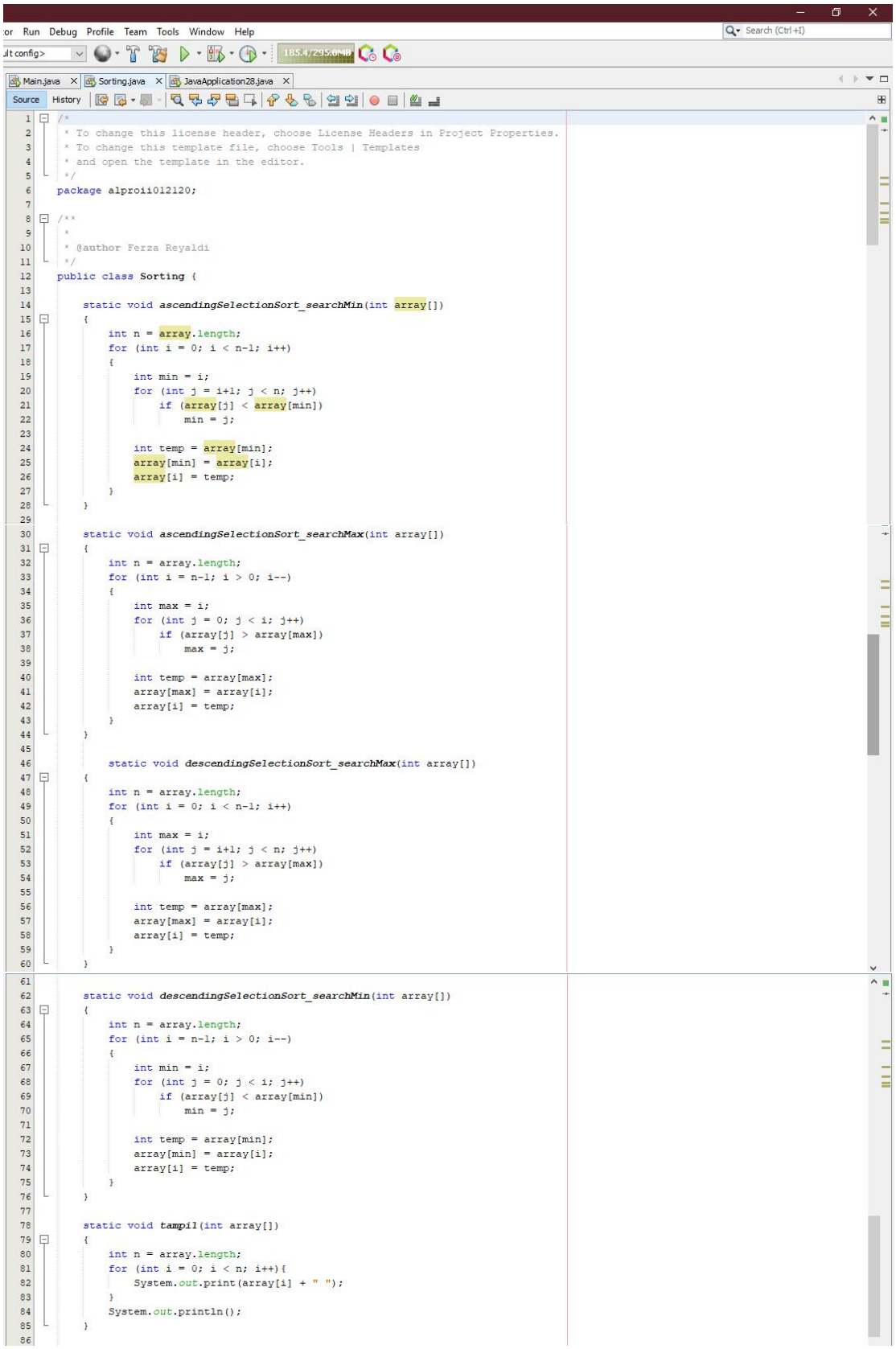
Selection Sort

```
/*
 * To change this license header, choose License Headers in Project
Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package alproii012120;

/**
 *
 * @author Ferza Reyaldi
 */
public class Sorting {

    static void ascendingSelectionSort_searchMin(int array[])
    {
        int n = array.length;
        for (int i = 0; i < n-1; i++)
        {
            int min = i;
            for (int j = i+1; j < n; j++)
                if (array[j] < array[min])
                    min = j;

            int temp = array[min];
            array[min] = array[i];
            array[i] = temp;
        }
    }

    static void ascendingSelectionSort_searchMax(int array[])
    {
        int n = array.length;
        for (int i = n-1; i > 0; i--)
        {
            int max = i;
            for (int j = 0; j < i; j++)
                if (array[j] > array[max])
                    max = j;

            int temp = array[max];
            array[max] = array[i];
            array[i] = temp;
        }
```

```
    }

        static void descendingSelectionSort_searchMax(int
array[])
    {
        int n = array.length;
        for (int i = 0; i < n-1; i++)
        {
            int max = i;
            for (int j = i+1; j < n; j++)
                if (array[j] > array[max])
                    max = j;

            int temp = array[max];
            array[max] = array[i];
            array[i] = temp;
        }
    }

    static void descendingSelectionSort_searchMin(int array[])
    {
        int n = array.length;
        for (int i = n-1; i > 0; i--)
        {
            int min = i;
            for (int j = 0; j < i; j++)
                if (array[j] < array[min])
                    min = j;

            int temp = array[min];
            array[min] = array[i];
            array[i] = temp;
        }
    }

    static void tampil(int array[])
    {
        int n = array.length;
        for (int i = 0; i < n; i++){
            System.out.print(array[i] + " ");
        }
        System.out.println();
    }

    public static void main(String[] args) {
        int A[] = {2,4,3,2,23,4,5,6,7};
        tampil(A);
        ascendingSelectionSort_searchMin(A);
```

```
        System.out.print("Selection sort menaik dengan pencarian
nilai minimum     : ");
        tampil(A);
        descendingSelectionSort_searchMin(A);
        System.out.print("Selection sort menurun dengan pencarian
nilai minimum    : ");
        tampil(A);
        ascendingSelectionSort_searchMax(A);
        System.out.print("Selection sort menaik dengan pencarian
nilai maksimum    : ");
        tampil(A);
        descendingSelectionSort_searchMax(A);
        System.out.print("Selection sort menurun dengan pencarian
nilai maksimum   : ");
        tampil(A);

    }
}
```

Screenshot Source Code:



```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package alproii012120;

/**
 *
 * @author Ferza Reyaldi
 */
public class Sorting {

    static void ascendingSelectionSort_searchMin(int array[])
    {
        int n = array.length;
        for (int i = 0; i < n-1; i++)
        {
            int min = i;
            for (int j = i+1; j < n; j++)
                if (array[j] < array[min])
                    min = j;

            int temp = array[min];
            array[min] = array[i];
            array[i] = temp;
        }
    }

    static void ascendingSelectionSort_searchMax(int array[])
    {
        int n = array.length;
        for (int i = n-1; i > 0; i--)
        {
            int max = i;
            for (int j = 0; j < i; j++)
                if (array[j] > array[max])
                    max = j;

            int temp = array[max];
            array[max] = array[i];
            array[i] = temp;
        }
    }

    static void descendingSelectionSort_searchMax(int array[])
    {
        int n = array.length;
        for (int i = 0; i < n-1; i++)
        {
            int max = i;
            for (int j = i+1; j < n; j++)
                if (array[j] > array[max])
                    max = j;

            int temp = array[max];
            array[max] = array[i];
            array[i] = temp;
        }
    }

    static void descendingSelectionSort_searchMin(int array[])
    {
        int n = array.length;
        for (int i = n-1; i > 0; i--)
        {
            int min = i;
            for (int j = 0; j < i; j++)
                if (array[j] < array[min])
                    min = j;

            int temp = array[min];
            array[min] = array[i];
            array[i] = temp;
        }
    }

    static void tampil(int array[])
    {
        int n = array.length;
        for (int i = 0; i < n; i++){
            System.out.print(array[i] + " ");
        }
        System.out.println();
    }

```

```
86
87      public static void main(String[] args) {
88          int A[] = {2,4,3,2,23,4,5,6,7};
89          tampil(A);
90          ascendingSelectionSort_searchMin(A);
91          System.out.print("Selection sort menaik dengan pencarian nilai minimum      : ");
92          tampil(A);
93          descendingSelectionSort_searchMin(A);
94          System.out.print("Selection sort menurun dengan pencarian nilai minimum     : ");
95          tampil(A);
96          ascendingSelectionSort_searchMax(A);
97          System.out.print("Selection sort menaik dengan pencarian nilai maksimum     : ");
98          tampil(A);
99          descendingSelectionSort_searchMax(A);
100         System.out.print("Selection sort menurun dengan pencarian nilai maksimum    : ");
101         tampil(A);
102
103     }
104 }
```

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SS Output Program:

Output - AlproII (run)

```
run:
2 4 3 2 23 4 5 6 7
Selection sort menaik dengan pencarian nilai minimum      : 2 2 3 4 4 5 6 7 23
Selection sort menurun dengan pencarian nilai minimum     : 23 7 6 5 4 4 3 2 2
Selection sort menaik dengan pencarian nilai maksimum     : 2 2 3 4 4 5 6 7 23
Selection sort menurun dengan pencarian nilai maksimum    : 23 7 6 5 4 4 3 2 2
BUILD SUCCESSFUL (total time: 0 seconds)
```

Output Penjabaran dari masing-masing method Selection Sorting

❖ Selection Sort Menaik dengan Pencarian Nilai Minimum

```
91      public static void main(String[] args) {
92          int A[] = {2,4,3,2,23,4,5,6,7};
93          System.out.print("Susuna awal :");
94          tampil(A);
95          ascendingSelectionSort_searchMin(A);
96          System.out.print("Selection sort menaik dengan pencarian nilai minimum      : ");
97          tampil(A);
98
99      }
```

```
Output - AlproII (run)
Susuna awal :2 4 3 2 23 4 5 6 7
2 4 3 2 23 4 5 6 7
2 2 3 4 23 4 5 6 7
2 2 3 4 23 4 5 6 7
2 2 3 4 23 4 5 6 7
2 2 3 4 4 23 5 6 7
2 2 3 4 4 5 23 6 7
2 2 3 4 4 5 6 23 7
2 2 3 4 4 5 6 7 23
Selection sort menaik dengan pencarian nilai minimum      : 2 2 3 4 4 5 6 7 23
BUILD SUCCESSFUL (total time: 0 seconds)
```

❖ Selection Sort Menaik dengan Pencarian Nilai Maksimum

```
91      public static void main(String[] args) {
92          int A[] = {2,4,3,2,23,4,5,6,7};
93          System.out.print("Susuna awal :");
94          tampil(A);
95          ascendingSelectionSort_searchMax(A);
96          System.out.print("Selection sort menaik dengan pencarian nilai maksimum      : ");
97          tampil(A);
98
99      }
```

```
Output - AlproII (run)
Susuna awal :2 4 3 2 23 4 5 6 7
2 4 3 2 7 4 5 6 23
2 4 3 2 6 4 5 7 23
2 4 3 2 5 4 6 7 23
2 4 3 2 4 5 6 7 23
2 4 3 2 4 5 6 7 23
2 2 3 4 4 5 6 7 23
2 2 3 4 4 5 6 7 23
2 2 3 4 4 5 6 7 23
Selection sort menaik dengan pencarian nilai maksimujm      : 2 2 3 4 4 5 6 7 23
BUILD SUCCESSFUL (total time: 0 seconds)
```

❖ Selection Sort Menurun dengan Pencarian Nilai Minimum

```
91      public static void main(String[] args) {
92          int A[] = {2,4,3,2,23,4,5,6,7};
93          System.out.print("Susuna awal :");
94          tampil(A);
95          descendingSelectionSort_searchMin(A);
96          System.out.print("Selection sort menurun dengan pencarian nilai minimum      : ");
97          tampil(A);
98
99      }
```

```
Output - AlproII (run)
Susuna awal :2 4 3 2 23 4 5 6 7
7 4 3 2 23 4 5 6 2
7 4 3 6 23 4 5 2 2
7 4 5 6 23 4 3 2 2
7 4 5 6 23 4 3 2 2
7 23 5 6 4 4 3 2 2
7 23 6 5 4 4 3 2 2
7 23 6 5 4 4 3 2 2
23 7 6 5 4 4 3 2 2
Selection sort menurun dengan pencarian nilai minimum      : 23 7 6 5 4 4 3 2 2
BUILD SUCCESSFUL (total time: 0 seconds)
```

❖ Selection Sort Menurun dengan Pencarian Nilai Maksimum

```
91      public static void main(String[] args) {
92          int A[] = {2,4,3,2,23,4,5,6,7};
93          System.out.print("Susuna awal :");
94          tampil(A);
95          descendingSelectionSort_searchMax(A);
96          System.out.print("Selection sort menurun dengan pencarian nilai maksimum      : ");
97          tampil(A);
98
99      }
```

Output - AlproII (run)

```
Susuna awal :2 4 3 2 23 4 5 6 7
23 4 3 2 2 4 5 6 7
23 7 3 2 2 4 5 6 4
23 7 6 2 2 4 5 3 4
23 7 6 5 2 4 2 3 4
23 7 6 5 4 2 2 3 4
23 7 6 5 4 4 2 3 2
23 7 6 5 4 4 3 2 2
23 7 6 5 4 4 3 2 2
Selection sort menurun dengan pencarian nilai maksimum      : 23 7 6 5 4 4 3 2 2
BUILD SUCCESSFUL (total time: 0 seconds)
```