Disadvantage of Bubble sort
1. Slow for Large data Set
2. Unnecessary comparision
3. Not Suitable for large Data Set

When we use Bubble Sort
1. When the input size is small
==========

Q2. Explain Selection sort in data Structure?
Ans:
Selection sort is a sorting algorithm that repeatedly select the smallest element/ largest element from the given unsorted array and swap it with the first element of that part

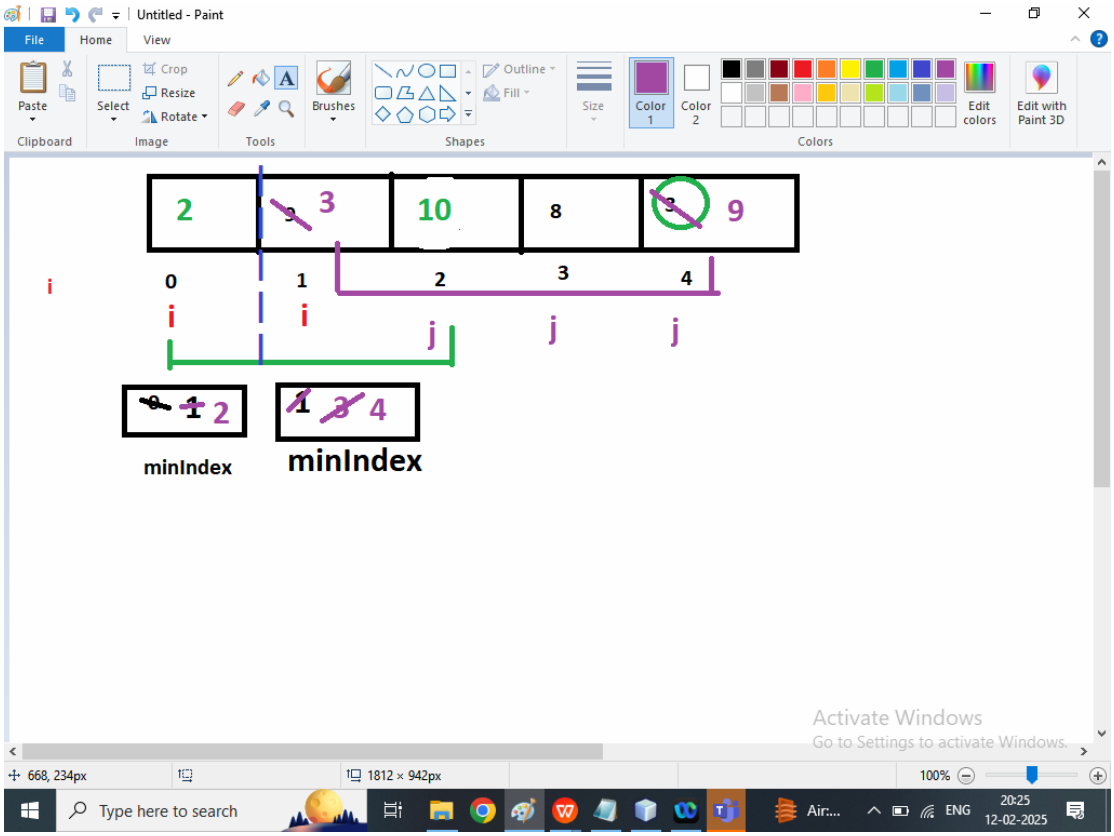
Algorithm

Step1: Find The smallest element from the un sorted list

Step2: Swap it with the first element of the unsorted Array

Step3: Move the boundary of the sorted part of the position

Step4: Repeat until the given array is sorted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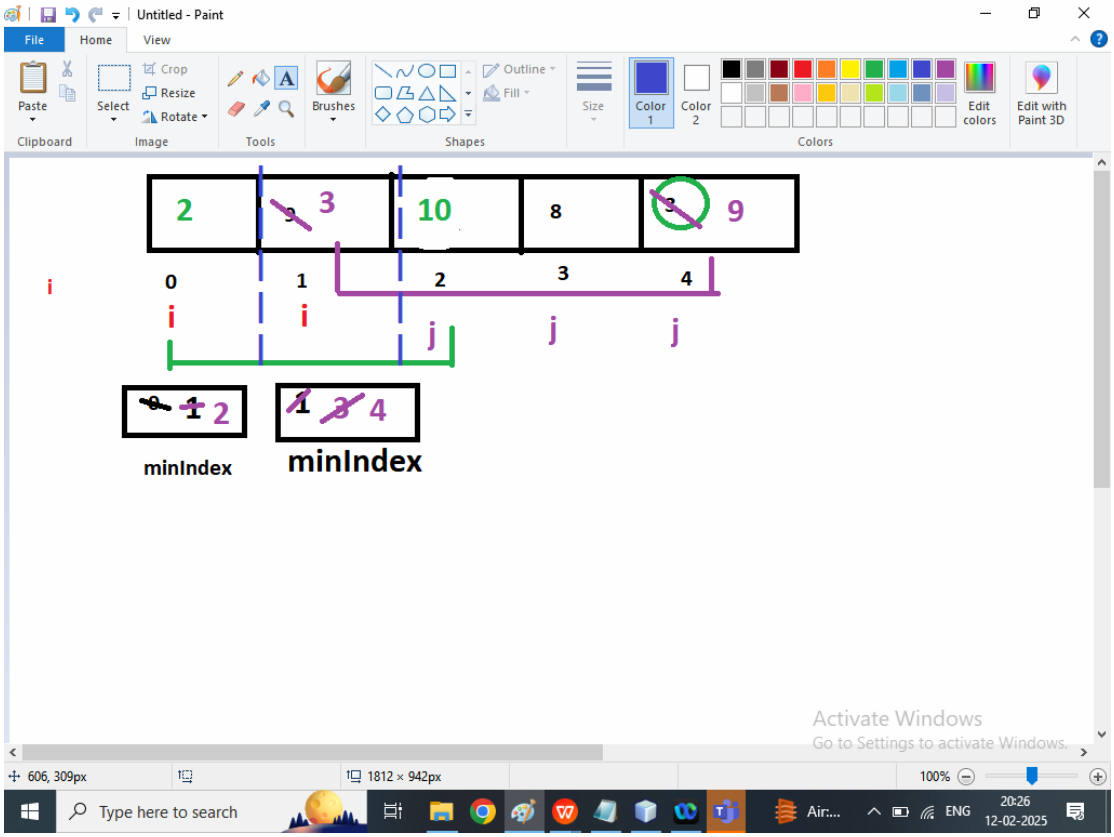
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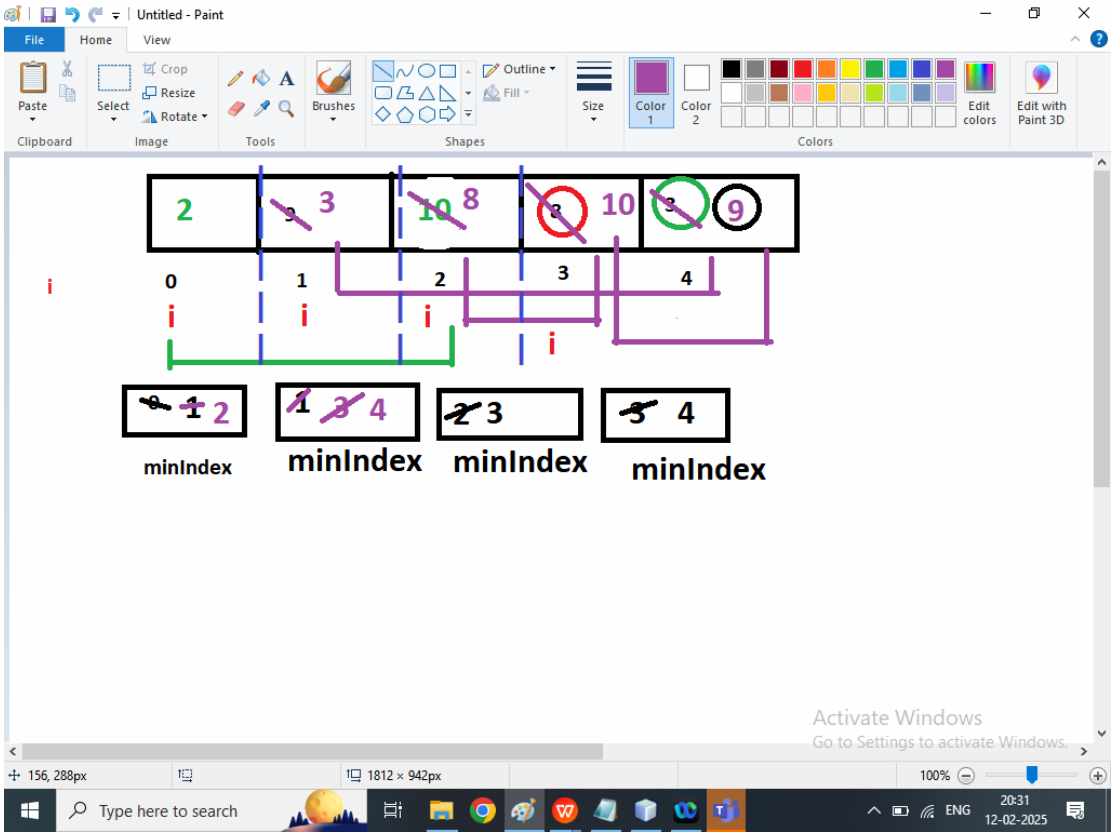
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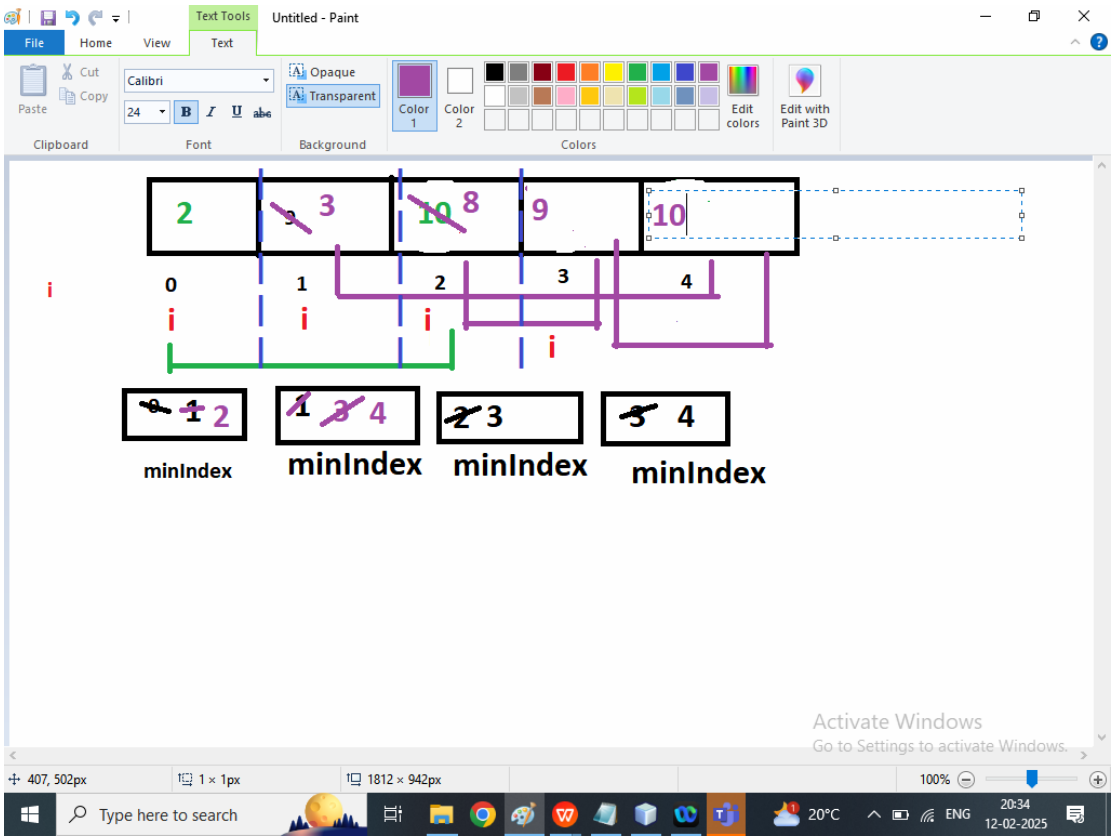
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/*

```
 * 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 dsafeb2025;

/**
 *
 * @author Admin
 */
public class SelectionSortDemo {
   public static void selectionSort(int arr[]){
      int n=arr.length;
      for(int i=0;i<n-1;i++){//i=0,1,2,3,4
         int minIndex=i;//minIndex=3
         for(int j=i+1;j<n;j++){//j=4,5
            if(arr[minIndex]>arr[j]){
               //arr[3]>arr[4]
               //8    >  3
               minIndex=j;
            }
         }
         int temp=arr[minIndex];//temp=3
         arr[minIndex]=arr[i];//arr[4]=9
         arr[i]=temp;//3

      }
   }
   public static void main(String[] args) {
      int arr[]={10,9,2,8,3};
      System.out.println("Print Before Sorting ");
      for(int i=0;i<arr.length;i++){
         System.out.print("\t"+arr[i]);
      }
      selectionSort(arr);
           System.out.println("\nPrint After Sorting ");
      for(int i=0;i<arr.length;i++){
         System.out.print("\t"+arr[i]);
      }
   }
}
```

Decending Order selection

```
/*
 * To change this license header, choose License Headers in Project Properties.
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 */
package dsafeb2025;

/**
 *
```

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 * @author Admin
 */
public class SelectionSortDemo {
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      int n=arr.length;
      for(int i=0;i<n-1;i++){//i=0,1,2,3,4
         int minIndex=i;//minIndex=3
         for(int j=i+1;j<n;j++){//j=4,5
            if(arr[minIndex]<arr[j]){
               //arr[3]>arr[4]
               //8    > 3
               minIndex=j;
            }
         }
         int temp=arr[minIndex];//temp=3
         arr[minIndex]=arr[i];//arr[4]=9
         arr[i]=temp;//3

      }
   }
   public static void main(String[] args) {
      int arr[]={10,9,2,8,3};
      System.out.println("Print Before Sorting ");
      for(int i=0;i<arr.length;i++){
         System.out.print("\t"+arr[i]);
      }
      selectionSort(arr);
           System.out.println("\nPrint After Sorting ");
      for(int i=0;i<arr.length;i++){
         System.out.print("\t"+arr[i]);
      }
   }
}
```
