**SEARCHING**

**Simple Linear Search Code using customized Logic**

#include <stdio.h>

int search(int arr[], int N, int x)

{

    int i;

    for (i = 0; i < N; i++)

        if (arr[i] == x)

            return i;

    return -1;

}

// Driver's code

int main(void)

{

    int arr[] = { 2, 3, 4, 10, 40 };

    int x = 10;

    int N = sizeof(arr) / sizeof(arr[0]);

    // Function call

    int result = search(arr, N, x);

    (result == -1)

        ? printf("Element is not present in array")

        : printf("Element is present at index %d", result);

    return 0;

}

**Equivalent Code using Collections**

ArrayList<Integer> numbers = **new** ArrayList<>(Arrays.*asList*(1, 2, 3, 4, 5, 6));

**if**(numbers.contains(1))

System.***out***.println("Found");

**else**

System.***out***.println("Not Found");

ArrayList<String> strings = **new** ArrayList<>(Arrays.*asList*("Alice","Ben","Chen"));

**if**(strings.contains("Alice"))

System.***out***.println("Found");

**else**

System.***out***.println("Not Found");

**SORTING**

int arr[50], num, x, y, temp;

printf("Please Enter the Number of Elements you want in the array: ");

scanf("%d", &num);

printf("Please Enter the Value of Elements: ");

    for(x = 0; x < num; x++)

        scanf("%d", &arr[x]);

    for(x = 0; x < num - 1; x++){

        for(y = 0; y < num - x - 1; y++){

            if(arr[y] > arr[y + 1]){

                temp = arr[y];

                arr[y] = arr[y + 1];

                arr[y + 1] = temp;

            }

        }

    }

printf("Array after implementing bubble sort: ");

    for(x = 0; x < num; x++){

        printf("%d  ", arr[x]);

    }

    return 0;

**}**

**Equivalent Code using Collections**

ArrayList<Integer> numbers = **new** ArrayList<>(Arrays.*asList*(1, 12, 3, 4, 15, 26));

System.***out***.println("Before Sorting" + numbers);

**Collections.sort(numbers);**

System.***out***.println("After Sorting" + numbers);

ArrayList<String> strings = **new** ArrayList<>(Arrays.*asList*("Ben","Alice","Chen"));

System.***out***.println("Before Sorting" + strings);

**Collections.sort(numbers);**

System.***out***.println("After Sorting" + strings);

ADDING ELEMENT AT SPECIFIED INDEX

int student[5]={10,20,30,40,50};

int pos,i,size,value;

   printf("enter the position where you want to insert the element:");

   scanf("%d",&pos);

   printf("enter the value into that poition:");

   scanf("%d",&value);

   for(i=size-1;i>=pos-1;i--)

      student[i+1]=student[i];

    student[pos-1]= value;

   printf("final array after inserting the value is");

   for(i=0;i<=size;i++)

      printf("%d", student[i]);

   return 0;

}

ArrayList<String> strings = new ArrayList<>(Arrays.asList("Ben","Alice","Dom"));

System.out.println("Before " + strings);

strings.add(2,"Charles");

System.out.println("After " + strings);