**1.Swapping of two Numbers** by   
a)Call By Value

**CODE:**

b)Call By Reference

**CODE:**

#include <stdio.h>

void swapByReference(int \*a, int \*b) {

int temp = \*a;

\*a = \*b;

\*b = temp;

}

int main() {

int num1, num2;

printf("Enter first number: ");

scanf("%d", &num1);

printf("Enter second number: ");

scanf("%d", &num2);

printf("Before swapping: num1 = %d, num2 = %d\n", num1, num2);

swapByReference(&num1, &num2);

printf("After swapping: num1 = %d, num2 = %d\n", num1, num2);

return 0;

}

**2.Find duplicates in an array**

Given an array a of size N which contains elements from 0 to N-1, you need to find all the elements occurring more than once in the given array. Return the answer in ascending order. If no such element is found, return list containing [-1].

**CODE:**

#include <stdio.h>

void findDuplicates(int arr[], int N) {

int i, j;

int flag = 0;

printf("Duplicate elements in the array: ");

for (i = 0; i < N; i++) {

for (j = i + 1; j < N; j++) {

if (arr[i] == arr[j]) {

printf("\n%d ", arr[i]);

flag = 1;

break;

}

}

}

if (flag == 0) {

printf("-1");

}

printf("\n");

}

int main() {

int N,i;

printf("Enter the size of the array: ");

scanf("%d", &N);

int arr[N];

printf("Enter elements of the array : ");

for (i = 0; i < N; i++) {

scanf("%d", &arr[i]);

}

findDuplicates(arr, N);

return 0;

}

**3.Union of Two Sorted Arrays**

Union of two arrays can be defined as the common and distinct elements in the two arrays. Given two sorted arrays of size n and m respectively, find their union.

**CODE:**

#include <stdio.h>

void printUnion(int arr1[], int m, int arr2[], int n) {

int i = 0, j = 0;

printf("Union of the two arrays: ");

while (i < m && j < n) {

if (arr1[i] < arr2[j]) {

printf("%d ", arr1[i]);

i++;

} else if (arr1[i] > arr2[j]) {

printf("%d ", arr2[j]);

j++;

} else {

printf("%d ", arr1[i]);

i++;

j++;

}

}

while (i < m) {

printf("%d ", arr1[i]);

i++;

}

while (j < n) {

printf("%d ", arr2[j]);

j++;

}

printf("\n");

}

int main() {

int m, n,i;

printf("Enter size of first array: ");

scanf("%d", &m);

int arr1[m];

printf("Enter elements of first array in sorted order: ");

for ( i = 0; i < m; i++) {

scanf("%d", &arr1[i]);

}

printf("Enter size of second array: ");

scanf("%d", &n);

int arr2[n];

printf("Enter elements of second array in sorted order: ");

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

scanf("%d", &arr2[i]);

}

printUnion(arr1, m, arr2, n);

return 0;

}