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#include <stdio.h>

void unionSets(int set1[], int size1, int set2[], int size2) {
    int unionSet[100], sizeUnion = 0;
    for (int i = 0; i < size1; i++) {
        unionSet[sizeUnion++] = set1[i];
    }
    for (int i = 0; i < size2; i++) {
        int found = 0;
        for (int j = 0; j < sizeUnion; j++) {
            if (set2[i] == unionSet[j]) {
                found = 1;
                break;
            }
        }
        if (!found) {
            unionSet[sizeUnion++] = set2[i];
        }
    }
    printf("Union: ");
    for (int i = 0; i < sizeUnion; i++) {
        printf("%d ", unionSet[i]);
    }
    printf("\n");
}

void intersectionSets(int set1[], int size1, int set2[], int size2) {
    int intersectionSet[100], sizeIntersection = 0;
    for (int i = 0; i < size1; i++) {
        for (int j = 0; j < size2; j++) {
            if (set1[i] == set2[j]) {
                intersectionSet[sizeIntersection++] = set1[i];
                break;
            }
        }
    }
    printf("Intersection: ");
    for (int i = 0; i < sizeIntersection; i++) {
        printf("%d ", intersectionSet[i]);
    }
    printf("\n");
}

void differenceSets(int set1[], int size1, int set2[], int size2) {
    int differenceSet[100], sizeDifference = 0;
    for (int i = 0; i < size1; i++) {
        int found = 0;
        for (int j = 0; j < size2; j++) {
            if (set1[i] == set2[j]) {
                found = 1;
                break;
            }
        }
        if (!found) {

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        differenceSet[sizeDifference++] = set1[i];
    }
}
printf("Difference (set1 - set2): ");
for (int i = 0; i < sizeDifference; i++) {
    printf("%d ", differenceSet[i]);
}
printf("\n");
}

int main() {
    int set1[100], set2[100], size1, size2;

    printf("Enter the number of elements in set 1: ");
    scanf("%d", &size1);
    printf("Enter elements of set 1:\n");
    for (int i = 0; i < size1; i++) {
        scanf("%d", &set1[i]);
    }

    printf("Enter the number of elements in set 2: ");
    scanf("%d", &size2);
    printf("Enter elements of set 2:\n");
    for (int i = 0; i < size2; i++) {
        scanf("%d", &set2[i]);
    }

    unionSets(set1, size1, set2, size2);
    intersectionSets(set1, size1, set2, size2);
    differenceSets(set1, size1, set2, size2);

    return 0;
}

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