PRACTICAL – 7

PROGRAM -1

AIM- Write a program in C to store elements in an array and print them

CODE:-

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| #include <stdio.h>  int main() {  printf("\n HARSH D \n");  int n;  printf("Enter the number of elements: ");  scanf("%d", &n);  int arr[n];  printf("Enter %d elements:\n", n);  for (int i = 0; i < n; i++) {  scanf("%d", &arr[i]);  }  printf("You entered:\n");  for (int i = 0; i < n; i++) {  printf("%d ", arr[i]);  }  return 0;  } |

OUTPUT:-

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PROGRAM -2

AIM- Write a program in C to find the sum of all elements of the array.

CODE:-

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| #include <stdio.h>  int main() {  printf("\n HARSH D \n");  int n, sum = 0;  printf("Enter the number of elements: ");  scanf("%d", &n);  int arr[n];  printf("Enter %d elements:\n", n);  for (int i = 0; i < n; i++) {  scanf("%d", &arr[i]);  sum += arr[i]; // Adding each element to the sum  }  printf("Sum of all elements in the array: %d\n", sum);  return 0;  } |

OUTPUT:-

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PROGRAM -3

AIM- Write a program in C to copy the elements of one array into another array.

CODE:-

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| #include <stdio.h>  #define MAX\_SIZE 100  int main() {  printf("\n HARSH D \n");  int n, i;  int arr1[MAX\_SIZE], arr2[MAX\_SIZE];  printf("Enter the number of elements in the array: ");  scanf("%d", &n);  printf("Enter elements of the array:\n");  for (i = 0; i < n; i++) {  scanf("%d", &arr1[i]);  }  // Copy elements from arr1 to arr2  for (i = 0; i < n; i++) {  arr2[i] = arr1[i];  }  // Display the elements of arr2  printf("Elements of the second array after copying:\n");  for (i = 0; i < n; i++) {  printf("%d ", arr2[i]);  }  return 0;  } |

OUTPUT:-

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PROGRAM -4

AIM- Write a program in C to print all unique elements in an array.

CODE:-

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| #include <stdio.h>  #define MAX\_SIZE 100  int main() {  printf("\n HARSH D \n");  int n, i, j, isUnique;  int arr[MAX\_SIZE];  printf("Enter the number of elements in the array: ");  scanf("%d", &n);  printf("Enter elements of the array:\n");  for (i = 0; i < n; i++) {  scanf("%d", &arr[i]);  }  printf("Unique elements in the array are: ");  // Find and print unique elements  for (i = 0; i < n; i++) {  isUnique = 1;  for (j = 0; j < n; j++) {  if (i != j && arr[i] == arr[j]) {  isUnique = 0;  break;  }  }  if (isUnique) {  printf("%d ", arr[i]);  }  }  return 0;  } |

OUTPUT:-

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PROGRAM -5

AIM- Write a program in C to merge two arrays of the same size sorted in descending order.

CODE:-

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| #include <stdio.h>  #define MAX\_SIZE 100  void mergeArrays(int arr1[], int arr2[], int n, int merged[]) {  int i = 0, j = 0, k = 0;  while (i < n && j < n) {  if (arr1[i] > arr2[j]) {  merged[k++] = arr1[i++];  } else {  merged[k++] = arr2[j++];  }  }  while (i < n) {  merged[k++] = arr1[i++];  }  while (j < n) {  merged[k++] = arr2[j++];  }  }  void sortArray(int arr[], int n) {  for (int i = 0; i < n - 1; i++) {  for (int j = i + 1; j < n; j++) {  if (arr[i] < arr[j]) {  int temp = arr[i];  arr[i] = arr[j];  arr[j] = temp;  }  }  }  }  int main() {  printf("\n HARSH D \n");  int n;  printf("Enter the number of elements in the arrays: ");  scanf("%d", &n);  int arr1[MAX\_SIZE], arr2[MAX\_SIZE], merged[MAX\_SIZE \* 2];  printf("Enter elements of the first array in descending order:\n");  for (int i = 0; i < n; i++) {  scanf("%d", &arr1[i]);  }  printf("Enter elements of the second array in descending order:\n");  for (int i = 0; i < n; i++) {  scanf("%d", &arr2[i]);  }  sortArray(arr1, n);  sortArray(arr2, n);  mergeArrays(arr1, arr2, n, merged);  printf("Merged array in descending order:\n");  for (int i = 0; i < n \* 2; i++) {  printf("%d ", merged[i]);  }  return 0;  } |

OUTPUT:-

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PROGRAM -6

AIM- Write a program in C to count the frequency of each element of an array.

CODE:-

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| #include <stdio.h>  #define MAX\_SIZE 100  int main() {  printf("\n HARSH D \n");  int n, i, j;  int arr[MAX\_SIZE];  int freq[MAX\_SIZE];    printf("Enter the number of elements in the array: ");  scanf("%d", &n);  printf("Enter elements of the array:\n");  for (i = 0; i < n; i++) {  scanf("%d", &arr[i]);  freq[i] = -1; // Initialize frequency of element as -1  }  for (i = 0; i < n; i++) {  int count = 1;  for (j = i + 1; j < n; j++) {  if (arr[i] == arr[j]) {  count++;  freq[j] = 0; // Mark the frequency of duplicates as 0  }  }  if (freq[i] != 0) {  freq[i] = count;  }  }  printf("Frequency of each element in the array:\n");  for (i = 0; i < n; i++) {  if (freq[i] != 0) {  printf("%d occurs %d times\n", arr[i], freq[i]);  }  }  return 0;  } |

OUTPUT:-

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PROGRAM -7

AIM- .Write a program in C for a 2D array of size 3x3.

CODE:-

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| #include <stdio.h>  #define ROWS 3  #define COLS 3  int main() {  printf("\n HARSH D \n");  int matrix[ROWS][COLS] = {  {1, 2, 3},  {4, 5, 6},  {7, 8, 9}  };  printf("2D Array 3x3:\n");  for (int i = 0; i < ROWS; i++) {  for (int j = 0; j < COLS; j++) {  printf("%d ", matrix[i][j]);  }  printf("\n");  }  return 0;  } |

OUTPUT:-

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