/\* ASSIGNMENT NO. 8

PROBLEM STATEMENT:Design a program with a template for sorting the accepted

array and displaying it using integer or float type data. Implement any sorting type

using Generic Programming..

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**PROGRAM:**

#include <iostream>

using namespace std;

// Template function for Selection Sort

template <typename T>

void selectionSort(T arr[], int n) {

for (int i = 0; i < n - 1; i++) {

int minIndex = i;

for (int j = i + 1; j < n; j++) {

if (arr[j] < arr[minIndex]) {

minIndex = j;

}

}

// Swap the found minimum element with the first element

if (minIndex != i) {

T temp = arr[i];

arr[i] = arr[minIndex];

arr[minIndex] = temp;

}

}

}

// Template function to display the array

template <typename T>

void displayArray(T arr[], int n) {

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

cout << arr[i] << " ";

}

cout << endl;

}

int main() {

int choice;

cout << "Choose the type of array you want to sort:" << endl;

cout << "Enter your choice (1 or 2): ";

cin >> choice;

if (choice == 1) {

int n;

cout << "Enter the number of elements: ";

cin >> n;

int arr[n];

cout << "Enter the elements: ";

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

cin >> arr[i];

}

// Sort and display the array

selectionSort(arr, n);

cout << "Sorted Integer Array: ";

displayArray(arr, n);

}

else if (choice == 2) {

int n;

cout << "Enter the number of elements: ";

cin >> n;

float arr[n];

cout << "Enter the elements: ";

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

cin >> arr[i];

}

// Sort and display the array

selectionSort(arr, n);

cout << "Sorted Float Array: ";

displayArray(arr, n);

}

else {

cout << "Invalid choice!" << endl;

}

return 0;

}

OUTPUT:

