#include <iostream>

using namespace std;

void display(int arr[], int n) {

cout << "Array elements: ";

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

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

}

cout << endl;

}

void insertElement(int arr[], int &n, int value, int pos) {

if (pos < 0 || pos > n) {

cout << "Invalid position!" << endl;

return;

}

for (int i = n; i > pos; i--) {

arr[i] = arr[i - 1];

}

arr[pos] = value;

n++;

cout << "Element inserted successfully." << endl;

}

void deleteElement(int arr[], int &n, int pos) {

if (pos < 0 || pos >= n) {

cout << "Invalid position!" << endl;

return;

}

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

arr[i] = arr[i + 1];

}

n--;

cout << "Element deleted successfully." << endl;

}

int searchElement(int arr[], int n, int key) {

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

if (arr[i] == key) return i;

}

return -1;

}

void updateElement(int arr[], int n, int pos, int newVal) {

if (pos < 0 || pos >= n) {

cout << "Invalid position!" << endl;

return;

}

arr[pos] = newVal;

cout << "Element updated successfully." << endl;

}

int main() {

int arr[100], n, choice, value, pos, key;

cout << "Enter number of elements (max 100): ";

cin >> n;

cout << "Enter elements: ";

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

cin >> arr[i];

}

do {

cout << "\n--- Array Operations Menu ---\n";

cout << "1. Display\n2. Insert\n3. Delete\n4. Search\n5. Update\n6. Exit\n";

cout << "Enter your choice: ";

cin >> choice;

switch (choice) {

case 1:

display(arr, n);

break;

case 2:

cout << "Enter value and position to insert: ";

cin >> value >> pos;

insertElement(arr, n, value, pos);

break;

case 3:

cout << "Enter position to delete: ";

cin >> pos;

deleteElement(arr, n, pos);

break;

case 4:

cout << "Enter value to search: ";

cin >> key;

pos = searchElement(arr, n, key);

if (pos != -1)

cout << "Element found at index " << pos << endl;

else

cout << "Element not found." << endl;

break;

case 5:

cout << "Enter position and new value: ";

cin >> pos >> value;

updateElement(arr, n, pos, value);

break;

case 6:

cout << "Exiting..." << endl;

break;

default:

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

}

} while (choice != 6);

return 0;

}