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/*This programme has 3 functions to swap two variables, by value, by reference, and using pointers*/

#include <iostream>
using namespace std;

// Functions declaration / prototypes:
void SwapByValue(int x, int y); // function declaration for swap function by value

void SwapByRef(int& x, int& y); // function declaration for swap function by reference

void SwapByPointers(int* px, int* py); // function declaration for swap function using pointers

void main() {

    int a = 1, b = 10; // Use for value and reference functions

    int *pa{ &a }, *pb{ &b }; // Use for pointer function

    cout << "Before: a = " << a << " b = " << b << endl;
    // Call the function
    SwapByPointers(pa, pb);
    cout << "After: a = " << a << " b = " << b << endl;

    system("pause");
}

// Swap function by value
void SwapByValue(int x, int y)
{
    int temp = x;
    x = y;
    y = temp;
}

// Swap function by reference
void SwapByRef(int& x, int& y)
{
    int temp = x;
    x = y;
    y = temp;
}

// Swap function using pointers
void SwapByPointers(int* px, int* py)
{
    int temp = *px;
    *px = *py;
    *py = temp;
}
```