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#include <iostream>
using namespace std;

// Comparison functions required by the lab.
bool compareValues(double *x, double *y);
bool compareAddress(double *x, double *y);

// Report on the results of the comparison in a readable way.
void postValueResults(bool result, double *x, double *y);
void postAddressResults(bool result, double *x, double *y);

int main() {

    // Data and pointer declaration and assignment.
    double num1 = 10.0;
    double num2 = 11.0;
    double *ptr1 = &num1;
    double *ptr2 = &num2;

    // Comparisons are made here, to test that the functions are working.
    cout << endl;
    cout << "\tNumber\t\tAddress\n";
    cout << "\t" << num1 << "\t\t" << ptr1 << "\n";
    cout << "\t" << num2 << "\t\t" << ptr2 << endl;
    cout << "\n\tComparing 10 to itself: " << endl;
    postValueResults(compareValues(ptr1, ptr1), ptr1, ptr1);
    postAddressResults(compareAddress(ptr1, ptr1), ptr1, ptr1);
    cout << "\n\tComparing 10 and 11: " << endl;
    postValueResults(compareValues(ptr1, ptr2), ptr1, ptr2);
    postAddressResults(compareAddress(ptr1, ptr2), ptr1, ptr2);
    cout << endl;

    return 0;
}

bool compareValues(double *x, double *y) {
    return *x == *y;
}

bool compareAddress(double *x, double *y) {
    return x == y;
}

void postValueResults(bool result, double *x, double *y) {
    if(result) {
        cout << "\tTrue, " << *x << " and " << *y;
        cout << " are equal in value." << endl;
    } else {
        cout << "\tFalse, " << *x << " and " << *y;
        cout << " are not equal in value." << endl;
    }
}

void postAddressResults(bool result, double *x, double *y) {
    if(result) {
        cout << "\tTrue, the address " << x;
        cout << " is shared." << endl;
    } else {
        cout << "\tFalse, addresses " << x << " and " << y;
        cout << " are not equal." << endl;
    }
}

```