CPP 程式設計題

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Main testing concept: templates

Basics	Functions
□ C++ BASICS	□ SEPARATE COMPILATION AND NAMESPACES
□ FLOW OF CONTROL	□ STREAMS AND FILE I/O
□ FUNCTION BASICS	□ RECURSION
□ PARAMETERS AND OVERLOADING	□ INHERITANCE
□ ARRAYS	□ POLYMORPHISM AND VIRTUAL FUNCTIONS
□ STRUCTURES AND CLASSES	■ TEMPLATES
□ CONSTRUCTORS AND OTHER TOOLS	□ LINKED DATA STRUCTURES
□ OPERATOR OVERLOADING, FRIENDS,AND REFERENCES	□ EXCEPTION HANDLING
	□ STANDARD TEMPLATE LIBRARY
□ STRINGS	□ PATTERNS AND UML
□ POINTERS AND DYNAMIC ARRAYS	

Description:

Please write a template-based function that calculates and returns the absolute value of the difference between two numeric values passed with Template.h.

Note that the function should operate with any numeric data type (e.g. float, int, double, char).

Input:

No inputs.

**The main() function in your submission will be replaced when judging.

**You can use the main() function in “Other Notes” to test your program.

Output:

The result of executing your program with the given main function.

Sample Input / Output:

Sample Input	Sample Output
No inputs	Absolute value of 10 - 20 is 10 Absolute value of 5.5 - 3.1 is 2.4 Absolute value of A - C is 2

■ Easy, only basic programming syntax and structure are required.

□ Medium, multiple programming grammars and structures are required.

□ Hard, need to use multiple program structures or complex data types.

Expected solving time:

10 minutes

Other notes:

```
#include "Template.h"
#include <iostream>
using namespace std;

int main()
{
```

```
    int i1, i2;
    double d1, d2;
    char c1, c2;
    i1 = 10; i2 = 20;
    cout << "Absolute value of 10 - 20 is " << absoluteValue(i1, i2) << endl;

    d1 = 5.5; d2 = 3.1;
    cout << "Absolute value of 5.5 - 3.1 is " << absoluteValue(d1, d2) << endl;

    c1 = 'A', c2 = 'C';
    cout << "Absolute value of A - C is " << absoluteValue(c1, c2) << endl;
    return 0;
}
```