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Self-Made Assignment - C Language

Call by Value and Call by Reference in C Language

Assignment Title: Swap Two Numbers Using Call by Value and Call by Reference

Objective:

To understand the difference between call by value and call by reference by writing two swap functions.

What the Program Should Do:

1. Ask the user to input two integers.
2. Call a swap function using call by value to swap the two numbers and print the result (this should NOT change the original values).
3. Call a swap function using call by reference (using pointers) to swap the two numbers and print the result (this should change the original values).

Instructions:

- Write a function:  

```
void swapByValue(int a, int b);
```

that swaps the two numbers locally (no effect on original variables).
- Write another function:  

```
void swapByReference(int *a, int *b);
```

that swaps the two numbers using pointers (modifies original variables).
- In main(), print the numbers before and after each swap to show the difference.

Output:

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```
Enter first number: 10
```

```
Enter second number: 20
```

```
Before swapByValue: num1 = 10, num2 = 20
```

```
After swapByValue: num1 = 10, num2 = 20
```

```
Before swapByReference: num1 = 10, num2 = 20
```

```
After swapByReference: num1 = 20, num2 = 10
```

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