COMP-165-0837

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Midterm 3

Problem #1

Code:

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\* This program implements three different functions intending to swap the values of variables.

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#include <iostream>

// Swaps ints by reference.

void swapRef(int& num1, int& num2);

// Swaps ints by dereferencing pointer.

void swapPtr(int\* num1, int\* num2);

// Swaps pointer to ints by passing double pointer.

void swapDblPtr(int\*\* num1, int\*\* num2);

int main(void)

{

int num1;

int num2;

std::cout << "Enter your first two values:" << std::endl;

std::cin >> num1;

std::cin >> num2;

swapRef(num1, num2);

std::cout << num1 << ", " << num2 << std::endl;

int\* numPtr1 = &num1;

int\* numPtr2 = &num2;

swapPtr(numPtr1, numPtr2);

std::cout << \*numPtr1 << ", " << \*numPtr2 << std::endl;

int\*\* numDblPtr1 = &numPtr1;

int\*\* numDblPtr2 = &numPtr2;

swapDblPtr(numDblPtr1, numDblPtr2);

std::cout << \*numDblPtr1 << ", " << \*numDblPtr2 << std::endl;

return 0;

}

void swapRef(int& num1, int& num2)

{

int swap = num1;

num1 = num2;

num2 = swap;

}

void swapPtr(int\* num1, int\* num2)

{

int swap = \*num1;

\*num1 = \*num2;

\*num2 = swap;

}

void swapDblPtr(int\*\* num1, int\*\* num2)

{

int\* swap = \*num1;

\*num1 = \*num2;

\*num2 = swap;

}

Output:

