TASK1:

int reverse(int &number, int cntr) // helper function

{

int answer = 0;

while (cntr)

{

answer = answer \* 10 + number % 10;

--cntr;

number /= 10;

}

return answer;

}

int newNum(int &number, int &addTo)

{

int answer = 0;

int cntr = 0;

while (number)

{

cntr++;

//int currentDigit = number % 10;

int newDigit = ((number % 10 + addTo >= 10) ? ((number % 10 + addTo) % 10) : number % 10 + addTo);

answer = answer \* 10 + newDigit;

number /= 10;

}

return reverse(answer, cntr);

}

int main()

{

int number1 = -1, number2 = -1;

cin >> number1 >> number2;

cout <<" Answer: "<< newNum(number1, number2) << endl;

return 0;

}

TASK2:

const int MAX\_SIZE = 100;

void inputArray(int \*arr, int &size);

void outputArray(int \*arr, int &size);

void moveElements(int \*arr1, int &size1, int \*arr2, int &size2, int &i);

void writeNewElements(int \*arr1, int &size1, int \*arr2, int size2, int &i)

{

int indexToTake = 0;

int indexToWrite = i;

while (size2 > 0)

{

arr1[indexToWrite] = arr2[indexToTake];

++indexToTake;

++indexToWrite;

size2--;

}

}

int main()

{

int size1 = -1, size2 = -1, arr1[MAX\_SIZE] = { 0 }, arr2[MAX\_SIZE] = { 0 };

cout << "How many elements do you want to store in the first array: ";

cin >> size1;

inputArray(arr1, size1);

cout << "\nHow many elements do you want to store in the second array: ";

cin >> size2;

inputArray(arr2, size2);

cout << "First array: ";

outputArray(arr1, size1);

cout << endl;

cout << "Second array: ";

outputArray(arr2, size2);

int i = -1;

cout << "\n\nAfter which index do you want me to blend the arrays? ";

cin >> i;

moveElements(arr1, size1, arr2, size2, i);

writeNewElements(arr1, size1, arr2, size2, i);

cout << " Answer: ";

for (int i = 0; i < size1 + size2; ++i)

cout << arr1[i] << " ";

cout << endl;

return 0;

}

void inputArray(int \*arr, int &size)

{

cout << "\nPlease enter the elements of the array:" << endl;

for (int i = 0; i < size; ++i)

cin >> arr[i];

}

void outputArray(int \*arr, int &size)

{

for (int i = 0; i < size; ++i)

cout << arr[i] << " ";

}

void moveElements(int \*arr1, int &size1, int \*arr2, int &size2, int &i)

{

int indexToBeMoved = i;

int indexToMoveTo = size2 + i;

do

{

arr1[indexToMoveTo] = arr1[indexToBeMoved];

++indexToBeMoved;

++indexToMoveTo;

} while (indexToBeMoved < size1);

}

TASK3:

const int MAX\_SIZE = 50;

void inputArray(int \*arr, int &size)

{

cout << "Please enter the integers:" << endl;

for (int i = 0; i < size; ++i)

cin >> arr[i];

}

void outputArray(int \*arr, int &size, int &cntr)

{

cout << "\n\n Answer: ";

for (int i = 0; i < size - cntr; ++i)

cout << arr[i] << " ";

cout << endl;

}

int findElement(int \*arr, int &size, int &number, int &cntr)

{

for (int i = 0; i < size - cntr; ++i)

if (arr[i] == number)

return i;

return -1;

}

bool removeElement(int \*arr, int &size, int &number, int &cntr)

{

int elementIndex = findElement(arr, size, number, cntr);

if (elementIndex < 0)

return false;

for (int j = elementIndex; j < size - cntr; ++j)

arr[j] = arr[j + 1];

cntr++;

if (findElement(arr, size, number, cntr) >= 0)

removeElement(arr, size, number, cntr);

return true;

}

int main()

{

int arr[MAX\_SIZE] = { 0 }, size = -1, removeMe = -1;

cout << "How many integers do you want the array to hold? ";

cin >> size;

inputArray(arr, size);

cout << "Which integer do you want to remove? ";

cin >> removeMe;

int cntr = 0;

cout << endl << (removeElement(arr, size, removeMe, cntr) == true ? "true" : "false") << endl;

outputArray(arr, size, cntr);

return 0;

}