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KAHLIL BELLO

DATA STRUTURES

SEPTEMBER 19, 2018

project 3 prob 3

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#include <iostream>

#include <string>

using namespace std;

class STACK

{

private:

char a[100];

int counter;

public:

void clearStack()

{

counter = 0;

}//end clearStack

bool emptyStack()

{

return (counter == 0) ? true : false;

}//end clearStack

bool fullStack()

{

return (counter == 100) ? true : false;

}//end fullStack

void pushStack(char x)

{

a[counter] = x;

counter++;

}//end pushStack

char popStack()

{

counter--;

return a[counter];

}//end popStack

}; //end class STACK

bool isUpper(char x)

{

return (isupper(x)) ? true : false;

}//end isUpper

bool isLower(char x)

{

return (islower(x)) ? true : false;

}//end isLower

bool isVowel(char x)

{

x = toupper(x);

return (x == 'A' || x == 'E' || x == 'I' || x == 'O' || x == 'U') ? true : false;

}//end isVowel

int main()

{

STACK UPP;

STACK LOW;

STACK VOW;

UPP.clearStack();

LOW.clearStack();

VOW.clearStack();

char c;

cout << "Enter a sentence: " << endl;

while (cin.get(c), c != '\n')

{

if (isUpper(c))

UPP.pushStack(c);

if (isLower(c))

LOW.pushStack(c);

if (isVowel(c))

VOW.pushStack(c);

}

cout << endl;

cout << "Uppercase letters: ";

while (!UPP.emptyStack())

{

char out = UPP.popStack();

cout << out << " ";

}

cout << endl;

//#################LOWER###############################

cout << "Lowercase letters: ";

while (!LOW.emptyStack())

{

char out = LOW.popStack();

cout << out << " ";

}

cout << endl;

//###################VOWELS#############################

cout << "Vowels: ";

while (!VOW.emptyStack())

{

char out = VOW.popStack();

cout << out << " ";

}

cout << endl;

system("pause");

return 0;

}

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OUTPUT:

Enter a sentence:

Today Is Monday

Uppercase letters: M I T

Lowercase letters: y a d n o s y a d o

Vowels: a o I a o

Press any key to continue . . .

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