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KAHLIL BELLO

DATA STRUTURES

SEPTEMBER 19, 2018

project 3 prob 2

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#include <iostream>

#include <ctime>

using namespace std;

class STACK

{

private:

int a[10];

int counter;

public:

void clearStack()

{

counter = 0;

}//end clearStack

bool emptyStack()

{

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

}//end emptyStack

bool fullStack()

{

return (counter == 10) ? true : false;

}//end fullStack

void pushStack(int x)

{

a[counter] = x;

counter++;

}//end pushStack

int popStack()

{

counter--;

return a[counter];

}//end popStack

};//end class STACK

int main()

{

srand(time(0));

STACK S;

STACK EVEN;

STACK ODD;

S.clearStack();

EVEN.clearStack();

ODD.clearStack();

int n;

for (int i = 1; i <= 10; ++i)

{

n = rand() % 99;

S.pushStack(n);

}

cout << "All numbers: ";

while (!S.emptyStack())

{

int x = S.popStack();

cout << x << " ";

if ((x % 2) == 0)

{

EVEN.pushStack(x);

}

else

{

ODD.pushStack(x);

}

}

//##########################################

cout << endl;

cout << "EVEN numbers: ";

while (!EVEN.emptyStack())

{

int xEven = EVEN.popStack();

cout << xEven << " ";

}

//##########################################

cout << endl;

cout << "ODD numbers: ";

while (!ODD.emptyStack())

{

int xOdd = ODD.popStack();

cout << xOdd << " ";

}

cout << "\n\n";

system("pause");

return 0;

}

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OUTPUT Test 1:

All numbers: 72 8 74 97 85 45 43 75 10 55

EVEN numbers: 10 74 8 72

ODD numbers: 55 75 43 45 85 97

Press any key to continue . . .

OUTPUT Test 2:

All numbers: 68 58 51 64 38 94 33 56 68 74

EVEN numbers: 74 68 56 94 38 64 58 68

ODD numbers: 33 51

Press any key to continue . . .

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Output test 1

