Day 8 Assignment

Q-2)#include <iostream>

#include <stdlib.h>

using namespace std;

class Stack {

private:

    static const int max = 100;

    int arr[max];

    int top;

public:

    Stack() { top = -1; }

    bool isEmpty();

    bool isFull();

    int pop();

    void push(int x);

};

bool Stack::isEmpty()

{

    if (top == -1)

        return true;

    return false;

}

bool Stack::isFull()

{

    if (top == max - 1)

        return true;

    return false;

}

int Stack::pop()

{

    if (isEmpty()) {

        cout << "Stack Underflow";

        abort();

    }

    int x = arr[top];

    top--;

    return x;

}

void Stack::push(int x)

{

    if (isFull()) {

        cout << "Stack Overflow";

        abort();

    }

    top++;

    arr[top] = x;

}

class SpecialStack : public Stack {

    Stack min;

public:

    int pop();

    void push(int x);

    int getMin();

};

void SpecialStack::push(int x)

{

    if (isEmpty() == true) {

        Stack::push(x);

        min.push(x);

    }

    else {

        Stack::push(x);

        int y = min.pop();

        min.push(y);

        if (x < y)

            min.push(x);

        else

            min.push(y);

    }

}

int SpecialStack::pop()

{

    int x = Stack::pop();

    min.pop();

    return x;

}

int SpecialStack::getMin()

{

    int x = min.pop();

    min.push(x);

    return x;

}

int main()

{

    SpecialStack s;

    s.push(40);

    s.push(50);

    s.push(60);

    cout << s.getMin() << endl;

    s.push(5);

    cout << s.getMin();

    return 0;

}