**שיעורי בית יסודות stackA וBrackets OK – אופיר הופמן י3**

class StackA

{

private char[] arr;

private int head;

public StackA(int size)

{

arr = new char[size];

head = 0;

}

public bool Push (char x)

{

if (head < arr.Length)

{

arr[head] = x;

head++;

return true;

}

return false;

}

public bool Is\_Empty()

{

return head == 0;

}

public char Pop()

{

if (!Is\_Empty())

{

head--;

return arr[head];

}

Console.WriteLine("Error");

return '!';

}

public override string ToString()

{

string s = "";

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

{

s += (arr[i] + "|");

}

return s;

}

}

class Program

{

public static bool BracketsOK(string s)

{

StackA brackets = new StackA(s.Length);

bool cont = true;

for (int i = 0; i < s.Length && cont; i++)

{

if (s[i] == '[' || s[i] == '(' || s[i] == '{')

{

brackets.Push(s[i]);

}

else

{

char ch = brackets.Pop();

cont = ((ch == '[' && s[i] == ']') || (ch == '{' && s[i] == '}') || (ch == '(' && s[i] == ')'));

}

}

return cont;

}

public static string ReadFile(string name)

{

string s = "";

using (StreamReader sr = new StreamReader(name))

{

s = sr.ReadLine();

}

return s;

}

static void Main(string[] args)

{

Console.WriteLine("Enter Size:");

int size = int.Parse(Console.ReadLine());

StackA stack = new StackA(size);

int popNum;

char ch;

bool cont = true;

while (cont)

{

Console.WriteLine("1) Push");

Console.WriteLine("2) pop");

Console.WriteLine("3) To String");

Console.WriteLine("4) Check Brackets");

Console.WriteLine("5) Get File, Check Brackets");

ch = char.Parse(Console.ReadLine());

if (ch == '1')

{

Console.WriteLine("Enter num:");

char num = char.Parse(Console.ReadLine());

stack.Push(num);

}

else if (ch == '2')

{

popNum = stack.Pop();

}

else if (ch == '3')

{

Console.WriteLine(stack);

}

else if (ch == '4')

{

Console.WriteLine("Enter string:");

string s = Console.ReadLine();

Console.WriteLine(BracketsOK(s));

}

else if (ch == '5')

{

Console.WriteLine("Enter file name:");

string name = Console.ReadLine();

string s = ReadFile(name);

if (BracketsOK(s) == true)

Console.WriteLine("OK");

else

Console.WriteLine("ERROR");

}

}

}

}