

שיעורי בית יסודות stack ו Brackets 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");
}

}

}

```