**Lab: Interfaces and Abstraction**

Problems for exercises and homework for the ["C# OOP" course @ SoftUni"](https://softuni.bg/trainings/2244/csharp-oop-february-2019).

You can check your solutions here: <https://judge.softuni.bg/Contests/1501/Interfaces-and-Abstraction-Lab>

* **Shapes**

**NOTE**: You need a public **StartUp** class with the namespace **Shapes**.

Build hierarchy of interfaces and classes:



You should be able to use the class like this:

|  |
| --- |
| **StartUp.cs** |
| var radius = int.Parse(Console.ReadLine());  IDrawable circle = new Circle(radius);  var width = int.Parse(Console.ReadLine());  var height = int.Parse(Console.ReadLine());  IDrawable rect = new Rectangle(width, height);  circle.Draw();  rect.Draw(); |

**Examples**

|  |  |
| --- | --- |
| **Input** | **Output** |
| 3  4  5 | \*\*\*\*\*\*\*  \*\* \*\*  \*\* \*\*  \* \*  \*\* \*\*  \*\* \*\*  \*\*\*\*\*\*\*  \*\*\*\*  \* \*  \* \*  \* \*  \*\*\*\* |

**Solution**

The algorithm for drawing a circle is:



The algorithm for drawing a rectangle is:



* **Cars**

**NOTE**: You need a public **StartUp** class with the namespace **Cars**.

Build a hierarchy of interfaces and classes:



Your hierarchy must be used with this code:

|  |
| --- |
| **StartUp.cs** |
| ICar seat = new Seat("Leon", "Grey");  ICar tesla = new Tesla("Model 3", "Red", 2);  Console.WriteLine(seat.ToString());  Console.WriteLine(tesla.ToString()); |

**Examples**

|  |
| --- |
| **Output** |
| Grey Seat Leon  Engine start  Breaaak!  Red Tesla Model 3 with 2 Batteries Engine start  Breaaak! |