

Lab 18

A Diamond Program

Objective:

Write a class that uses the shape interface to now draw a diamond

- First download the [driver](#) and put it in your project
 - DO NOT ALTER THE DRIVER!
- Also download the [ShapeBasics](#) and [ShapeInterface](#) to use in your code
- Write an INTERFACE called **DiamondInterface** which inherits from ShapeInterface
- Create the following method definitions
 - setWidth – this method is used to set the width of the diamond
- Write a class file called **Diamond** that DOES NOT HAVE a main method
- This class implements the DiamondInterface and inherits from ShapeBasics
- Some of the attributes of Diamond are
 - width – that represents the width of the triangle that has to be odd
- Create the following Constructors
 - Default – sets everything to default values
 - width = 0
 - One that has the parameters
 - Offset – used in the parent class
 - width
- Accessors and Mutators for each variable
 - MAKE SURE THE MUTATORS CHECK FOR VALID VALUES!
- Create the following Methods
 - setWidth – this sets the width of the diamond. This must be implemented just like the interface. This number must be odd.
 - drawHere – this draws the diamond and overrides the method in ShapeBasics
 - drawTopV – this private method draws the top part of the diamond
 - drawBottomV – this private method draws the bottom part of the diamond
- Create the following static methods
 - skipSpaces – this takes in a certain number of spaces to skip which means drawing “ ”.

Example Dialog:

Welcome to the diamond drawer

Enter the diamond size followed by the offset or 0 to quit

7

1

```
  *
 * *
*   *
*   *
*   *
*   *
*   *
  *
```

Enter the diamond size followed by the offset or 0 to quit

0

0

bye!

Lab Report Questions

1. Is it possible to create an instance of an interface?
2. How many classes can any class inherit? How many interfaces can a class implement?

Finally:

Upload DiamondInterface.java and Diamond.java file to the dropbox