Assignment 6: Group Figures

This assignment is to support composite figures as a further extension to *JDraw*. A composite figure consists of a finite set of other figures. The dimension (`getBounds`) of a composite figure is the smallest rectangle which surrounds the bounds of all contained figures.

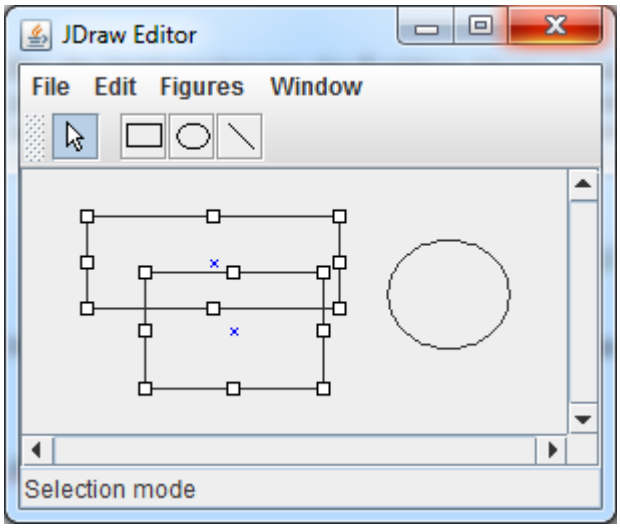
The implementation of method `setBounds` (resizing of composite figures) is rather tricky. If you change the figure over a handle you might therefore only move the composite figure instead of resizing it.

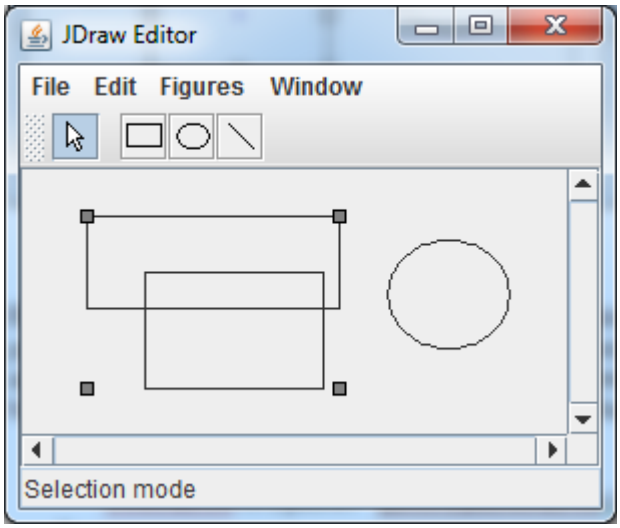
The composite figure has to implement the interface `Figure` as well. The figures contained in a composite figure are best stored in a list. In order to compute the bounding rectangle the bounds of the sub figures have to be added. For the addition of two rectangles method `add` of class `java.awt.Rectangle` might be used.

In the menu of the graphics editor which is set up in method `createEditMenu` of class `StdContext`, the actions of the entries *Group* and *Ungroup* have to be implemented (and to be activated with `setEnabled(true)`).

- *Group* replaces in a graphic the selected figures with a new composite figure. The selection can be accessed with method `getView().getSelection()` and can be extended with method `getView().addToSelection()`.

- *Ungroup* replaces in a selection all composite figures by its parts (not recursively).





When implementing the *ungroup* functionality, you have to check which of the selected figures are actually composite figures. For the composite figures, a type cast is necessary in order to access the figure parts of the composite. That your implementation not only works with your own composite figure implementation, we have defined the interface `FigureGroup` which provides access to the parts of a group figure. If you make a type cast of this interface and access the figure parts with method `getFigureParts`, then your implementation of ungroup works with all composite implementations which implement this interface.

```
public interface FigureGroup {
    Iterable<Figure> getFigureParts();
}
```

Deadline: November 06, 2018