

## **Asteroid Rally**

Your name:

By the time you are done with this activity, you should be able to:

- define nontrivial classes.
- use a UML class diagram to decide on an order in which to write those classes.

After you complete this activity, please fill out the short survey at

<http://goo.gl/forms/HXjyuUb2ou>

to improve this project for future users.

## Playing the game

Included in the Asteroid Rally project is a file `AsteroidRally.jar`. This is a compiled version of the working game. To play it, use a terminal to navigate to the directory containing the file and type this on the command line:

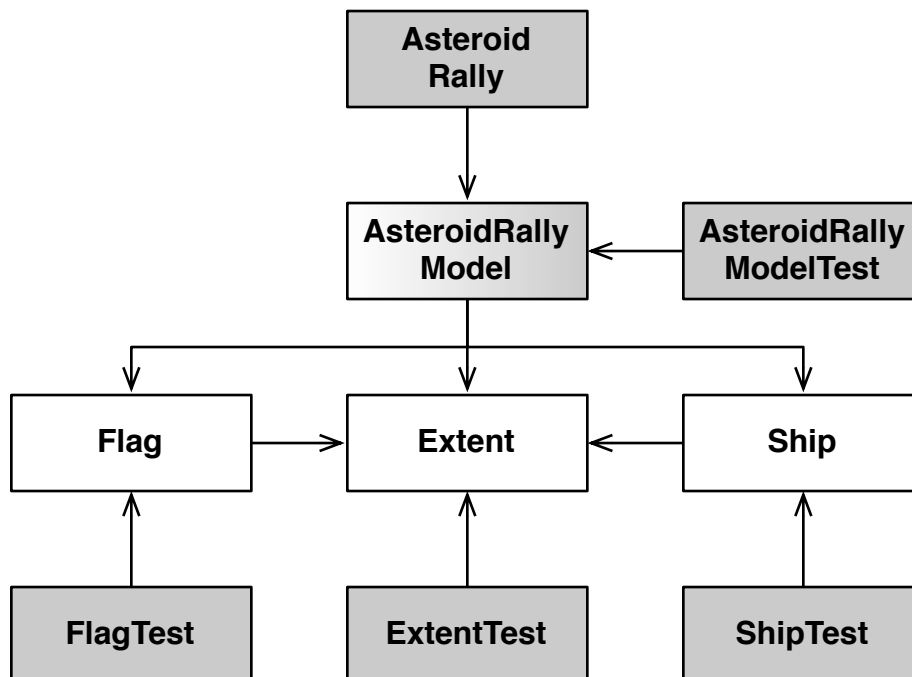
```
java -jar AsteroidRally.jar
```

*Asteroid Rally* is an original invention, heavily inspired by Atari's 1979 arcade game *Asteroids*. This is a two-player game. You and another student should play a few times to get a sense of how the game works.

## Overview

You have only been given some of the files needed to play the game. Your first job is to complete the program so that it behaves *exactly* like `AsteroidRally.jar`. After that, you are free to make purely graphical enhancements such as a starfield background or flames shooting out of the back of a ship as it accelerates. Any changes to the game logic (more players, moving asteroids, guns, etc.) would interfere with the tests, so do any such exploration after you hand in your program.

The UML class diagram below shows the relationships between classes. The shaded classes have been provided for you; you should not alter them. `AsteroidRallyModel` is half-shaded because you have been given an incomplete skeleton. The other classes you must write yourself.



Take notes as you work. What bugs and conceptual difficulties did you encounter? How did you overcome them? What did you learn?

For each of the classes you need to create there is a corresponding test class. These test classes won't compile yet because they depend on classes you need to write! For each class below:

1. Write a bare skeleton of the class so that the test will compile. Don't bother providing any instance variables or putting any content in the methods (other than a return statement that might be necessary for the class to compile). You will have to examine the tests to see what methods are needed.
2. Fail the tests.
3. Work through the tests one at a time *in the order in which they appear in in the test class*, writing the necessary code in your class to pass them. Pass one test before moving on to the next one.

You should not modify any of the given tests. If it is helpful for debugging, you may write additional tests.

## Implementation

Decide in what order to tackle the remaining classes.

Please fill out the survey at <http://goo.gl/forms/HXjyuUb2ou>.

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