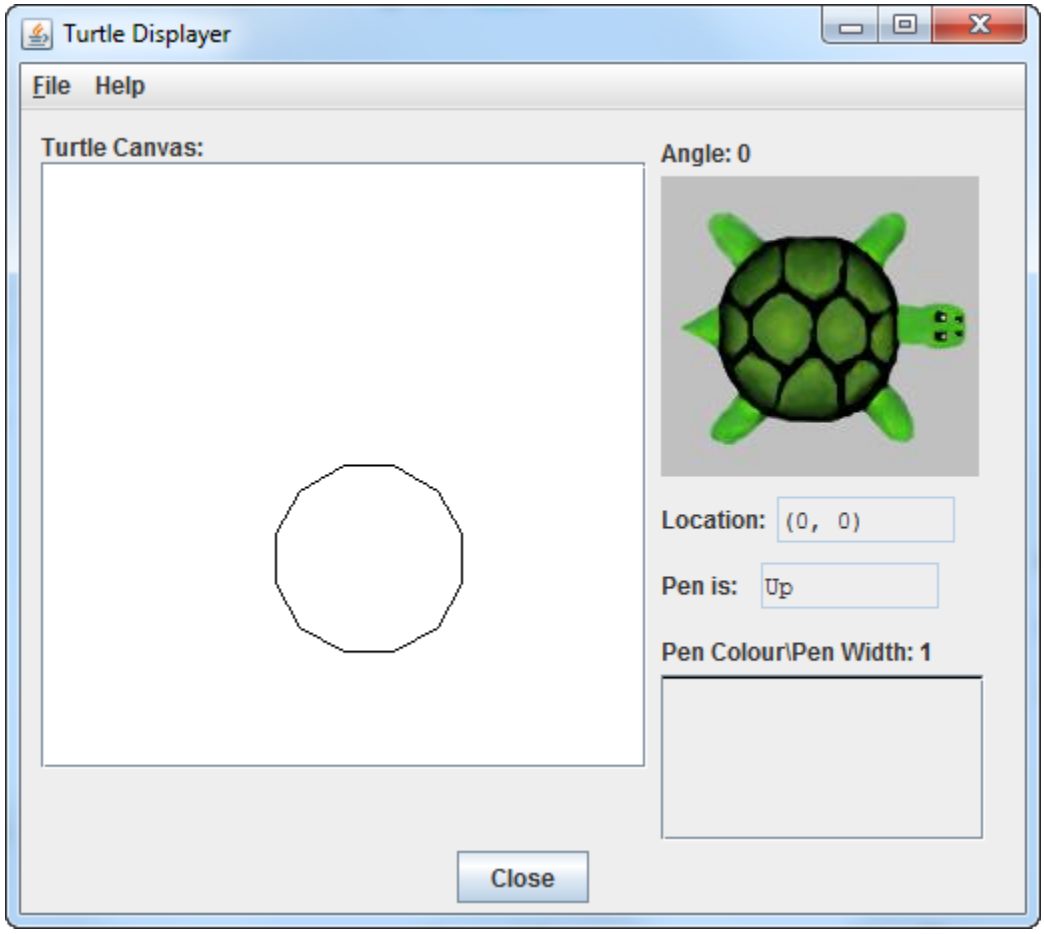
COSC 1P02 Assignment 1
"Crystal Clear"

Due: Oct. 7, 2016 @ 4:00 pm ***(late date Oct. 10 @ 4:00 pm)***

In preparation for this assignment, create a folder called `Assign_1` and two subfolders `Assign_1_A` and `Assign_1_B` for the DrJava projects for the assignment.

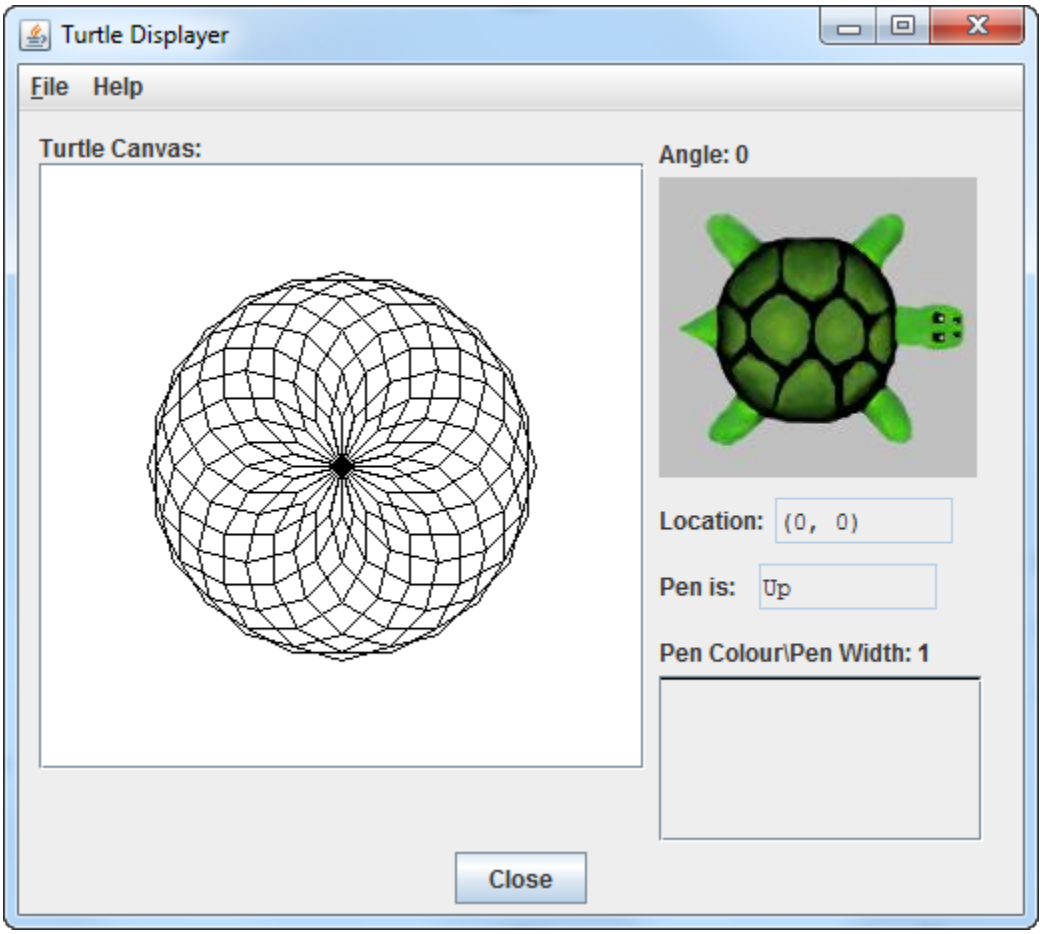
Part A

As part of a package called `Assign_1_A`, write a Java class called `Dodecagon`. A dodecagon is a regular closed figure with 12 sides. The class should draw a dodecagon with sides of length 25 with the first side drawn from the initial turtle position in the initial turtle direction and should produce a drawing as below:



Part B

As part of the package `Assign_1_B`, write a class called `Crystal` that draws a crystal as shown below:



The crystal is composed of 24 dodecagons each drawn from the center of the canvas and rotated appropriately to complete a full circle.

Hints:

- Copy and paste the class `Dodecagon` from Part A as a starting point for the `Crystal` class and then extend the code appropriately.
- Remember a full circle is 2π
- Since there are a lot of lines, use a `FAST` turtle. You can specify a speed for the turtle in the creation expression such as:

  ```
  yertle = new Turtle(FAST);
  ```

  The constant `FAST` can be imported from the `Turtle` class via:

  ```
  import static Media.Turtle.*;
  ```

Submission:

Details regarding preparation and submission of assignments in COSC 1P02 are found on the COSC 1P02 Sakai Site as `Assignment Guidelines` under `Course Documents`. This document includes a discussion of assignment preparation, programming standards, evaluation criteria and academic conduct (including styles for citation) in addition to the detailed assignment submission process copied below.

To prepare and submit the assignment electronically, follow the procedure below:

1. Ensure your folder (`Assign_1`) for the assignment has subfolders `Assign_1_A` and `Assign_1_B` containing the DrJava projects for the two parts of the assignment.
2. Using DrJava, print (to `CutePDF Writer`) the `.java` file of each of the parts for your assignment using the name *`ClassName`*`.pdf` where *`ClassName`* is the class name (i.e. same name as the `.java` file) and save the `.pdf` files at the **top level** of the assignment folder (i.e. directly within `Assign_1`).
3. Run the program for each part. When the display is finished (i.e. `Close` button visible), select `Print Image of Window...` from the `File` menu on the `TurtleDisplayer` and direct the output to `CutePDF Writer` and saving the `.pdf` file at the **top level** of the assignment folder (i.e. directly within `Assign_1`) using an appropriate name (e.g. `PartA.pdf`).
4. Create a `.zip` file of your submission by right-clicking on the top level folder (i.e. `Assign_1`) and selecting `Send to/Compressed (zipped) folder`. A zipped version of the folder will be created. Use the default name (`Assign_1.zip`).
5. Log on to Sakai and select the COSC 1P02 site.
6. On the `Assignments` page select `Assignment 1`. Attach your `.zip` file (e.g. `Assign_1.zip`) to the assignment submission (use the `Add/Remove Attachments` button and select `Browse`). Navigate to where you stored your assignment and select the `.zip` file (`Assign_1.zip`). The file will be added to your submission. Be sure to check the `Honor Pledge` checkbox. Press `Submit` to submit the assignment. You should receive a confirmation email.

DrJava

The `.zip` folder you submit should contain the project folders for the two parts, including all files relevant to the project—the `.java` and `.class` files for the assignment—and the `.pdf` files for program listings and output at the top level.

Other Platforms

If you are using an IDE other than DrJava to prepare your assignment, you must include the `.java` source files and the `.pdf` files described above for each part as well as an executable file (likely `.class` or `.jar`) that will execute on the lab machines.