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Lab Exercise for Assignment 5

Intro to Programming: Lab Exercise for Assignment 5

Goals

This assignment will give you experience in defining classes for objects with fields and constructors.

Resources and links

- Download Zip file of necessary code and data. Please note that the zip file also contains code and data for the assignment.
- Video of the Object Exercise

Objects Exercise

The exercise involves completing classes that define two simple kinds of objects: `partyBalloon`, and `FlagStaff`. There is an `ObjectsExercise` class that is written for you which you can use to test your code. You may want to read and understand the code for that class, but you do not have to modify it.

`PartyBalloon`

A `PartyBalloon` object represents a small round balloon drawn on the graphics pane. A `PartyBalloon` object must remember its current position and its color. Its initial position and its color are set when it is constructed. It has three methods.

You need to
- declare fields to hold the position and the color.
- define a constructor that has three parameters for the initial position and the color, stores that information in the fields.
- complete the three methods
  - `draw()` which draws the balloon in the appropriate color at its current position.
  - `riseLeft()` which changes the position of the balloon by 20 units up and 5 units to the left.
  - `riseRight()` which changes the position of the balloon by 20 units up and 5 units to the right.
- Note: The last two methods do NOT erase or redraw the balloon.

`FlagStaff`

A `FlagStaff` object represents a flagstaff with a flag that can be raised or lowered. A FlagStaff is drawn using a vertical line for the flag pole and a rectangle for the flag.

You need to
- declare fields to store the position of the flagstaff and the height of the flag above the base of the flagstaff.
- define a constructor to initialise the fields.
- define three methods:
  - `draw` which will redraw the flagstaff (a line for the pole and a rectangle for the flag)
  - `raise` which should raise the flag by the amount specified in the parameter (except it should never let the flag go over the top of the flagstaff). (Does NOT redraw the flag)

- `lower` which should lower the flag by the amount specified in the parameter (except it should never let the flag go below the bottom of the flagstaff). (Does NOT redraw the flag).

NOTE: For the FlagStaff, the method headers aren't provided, so you have to write the method headers as well as the code inside the methods.