CS8, Spring 2017, UCSB
Hw9: Worth 50% of Lab09 score (50 total points)

Print this form, and write your answers on it.

Accepted: On paper, at *your* lab section on Tuesday, June 6.
        Place on the front desk as you walk in, before getting seated.

Name (2 pts): _____

Umail (2 pts): _____@umail.ucsb.edu

Lab Time (2 pts) Circle one: 8am   9am   10am   11am

To answer the questions on this homework, it will be very helpful to have a
computer system running Python 3.x available, plus access to the cImage module
(at https://www.cs.ucsb.edu/~mikec/cs8/misc/demos/imagestuff/cImage.py).

Read Sections 6.1 – 6.3.2 of the textbook. Then answer these questions:

   1. (3 pts) What 3 colors are used to specify a cImage.Pixel?

   2. (10 pts) Write the sequence of Python instructions necessary – starting
from the moment you open the session – to load an image "dolphins.gif" and
display it in a window that is the same size as the image.

   3. (5 pts) Write a function that takes a pixel as an input parameter and
removes all of the red from a copy of the pixel – return a new pixel with the
proper values. Name your function removeRedFromPixel.

   4. (10 pts) Write a function that removes the red from all of the pixels
in an image. Name your function removeRedFromImage. Use the removeRedFromPixel
function you wrote for the last problem.

5. Read section 6.4 at least through part 6.4.1. Then examine this function:

```
def addFive(value):
    print("entering addFive, value:", value)
    value = value + 5
    print("leaving addFive, value:", value)
```

a. (5 pts) Explain the following results:

```
>>> value = 10
>>> addFive(value)
entering addFive, value: 10
leaving addFive, value: 15
>>> print(value)
10
```

b. (5 pts) Draw a reference diagram like the one on page 32 (that's right, way back in chapter 1) that supports your explanation for part a.

c. (3 pts) If the addFive function used return to send back a copy of the new value, and if this function was used properly, then it would be possible to change a value by using the function. Add one Python statement to the function below - be sure to write this statement in the proper location:

```
def addFive(value):

    print("entering addFive, value:", value)

    value = value + 5

    print("leaving addFive, value:", value)
```

d. (3 pts) In part a above, the function was used as follows:

```
>>> addFive(value)
```

Rewrite this statement to use your new version of the function from part c in such a way that it will actually change the value of the variable called value.

End of Hw9