Lab: Angry Birds

1. Create a file called `pigs1.txt` with the numbers 1, 3, 5, 3, 1 on separate lines. (Make sure there is no extra blank line at the end!) Files like this represent the sequence of pigs --- and their energies --- that the birds have to defeat. Write a function to read in a list of pig energies from a file and store them in a list (this handout calls these lists "pig lists"). Return the pig list at the end.

   ```
   def read_pigs_from_file(filename):
   ```

   Ex: `read_pigs_from_file("pigs1.txt")` returns `[1, 3, 5, 3, 1]`

2. Write a function to return `True` if all the pigs have been defeated, which happens when all of their energies are reduced to zero. Otherwise, return `False`.

   ```
   def all_defeated(pig_list):
   ```

   Ex: `all_defeated([1, 3, 5])` returns `False`
   Ex: `all_defeated([0, 0, 0])` returns `True`

3. A *red bird* is the simplest type of bird you can launch at the pigs. It is launched with a specific pig target in mind. When a red bird hits its target, it decreases that pig's energy by one, unless the pig's energy is already zero. Write a function `launch_red_bird` that takes a pig list and a target (specified as an index in the pig list) as parameters. This function should decrease the target pig's energy by one and return the updated pig list. Hint: you don't need a loop for this.

   ```
   def launch_red_bird(pig_list, position):
   ```

   Ex: `launch_red_bird([1, 3, 5], 2)` returns `[1, 3, 4]`

4. A *blue bird* is much more powerful than a red bird: a blue bird doesn't target one pig; it targets all of the pigs and decreases all of their energies by one. Write `launch_blue_bird` that takes a pig list and decreases all the pigs' energies by one, unless they're already zero. Return the updated pig list.

   Ex: `launch_blue_bird([1, 3, 5])` returns `[0, 2, 4]`

5. A *purple bird*, when launched, seeks out the pig with the largest amount of energy and reduces that specific pig's energy to zero all at once. Write `launch_purple_bird` which takes a pig list and returns a new pig list reflecting the updated energies after the purple bird is launched. Do not use the sort(), min() or max() functions for this; write your own loop.

   Ex: `launch_purple_bird([1, 3, 5])` returns `[1, 3, 0]`
   Ex: `launch_purple_bird([1, 3, 5, 7, 4])` returns `[1, 3, 5, 0, 4]`

6. An *orange bird* seeks out the pig with the smallest amount of non-zero energy and reduces that specific pig's energy to zero all at once. Write `launch_orange_bird` which takes a pig list and finds the pig with the minimum amount of energy (but still greater than zero), sets that pig's energy to zero, and returns the updated pig list. Do not use the sort(), min() or max() functions for this; write your own loop.

   Ex: `launch_orange_bird([1, 3, 5])` returns `[0, 3, 5]`
   Ex: `launch_orange_bird([0, 5, 7, 2, 4])` returns `[0, 5, 7, 0, 4]`