# HW 11 Description:

Python Data and Computations in the book, Computational Methods for Bioinformatics: Python 3.4, Third Edition by Jason Kinser.

## Part 1

Worksheet 1 exercises for learning module 28 Images

## Part 2

Worksheet 1 and 2 exercises for learning module 30 Py Random

## Part 3

Use the knowledge you have gained to write a python simulation for the game of go fish. In go fish each person gets 5 cards with the remainder of the deck left as a draw pile or ‘pond’.  At each turn one player asks another player if they have any cards of a given rank, such as 2, 10, King, Ace. If the opponent is holding such a card or many cards of the requested rank, regardless of the suit (diamonds, clubs, hearts, spades) they must give the card to the requestor. This is a ‘win’ for the requesting player, and they remove the cards from play. This increases the point count for the winning player’s score. If the requestor does not have a card they respond ‘go fish’ and the requestor must draw from the pond. Play continues until either all the cards are exhausted or there are no additional plays that can be made (e.g. each remaining card in play is of unique rank).

Some considerations for your game:

* Start simple - just two players, a single deck of cards, each person gets a turn in alternating fashion
* Gradually get more complex - move to three and up to 4 players, change the rules to let a win result in an additional turn for that player until they don’t get a win, choose randomly for the starting player.
* Run the simulation many times (1000) and see if any one player wins more than the others.

What to turn in: Your code documented to convey what you were trying to do with that section of code, a graphic showing the number of times each of four players won with total number of games played = 1000.

This is an individual assignment and should be your own work.

**Format:** Please submit the assignment in pdf or MSWord compatible format. Please show code used and output of the code in your submission.

**Point value:**

Part 1) 8 points (4 points per problem)

Part 2) 16 points (4 points per problem)

Part 3) 16 points total

**Due Date:** April 23, 2018