Exercise 1

1. Warming up task with Python/Matlab
   - Load data bogus_student_data.txt
   - Visualize the distribution of the final grades. Visualize the connection between exercises done and points earned in the exam. What conclusions could you draw from these plots? Tips: Use package **matplotlib** if you are using Python.
   - Compute the mean and standard deviation (std) of exercise points over all observations. Then compute mean and std. per grade (i.e. one mean/std for students who gained grade 0, one for students who gained 1, etc.)
   - Can you reliably tell if student is going to get grade 5 or grade 0 by looking at the amount of done exercise alone? What would be the amount of exercise points that you could say the student will get grade 5? Repeat this for grades 4 and 5. Tips: Lecture notes and examples with fish.

2. Given the normal data illustrated in the figure on the left, generate ten circle detectors using the negative selection algorithm. You are free to choose the sizes of detectors. The lower and upper limits of the data are 0 and 1, respectively. Show your detectors in the same figure. An example of detectors is given in the figure on the right. The normal data is saved in **Normal_Data.mat**. Tips: You can use **scipy.io.loadmat** to load Matlab.mat files on Python.