Project #2
Points 10, Due: 11:59 pm, Mar 15

1. Write a brief (no more than a paragraph) note on the importance of the choice of parameter settings in evolutionary algorithms. Or argue, with well-articulated, precise reasons (one paragraph only), that parameters do not really matter in EC.

2. Solve (minimize) the "Shekel's foxholes" problem (this is a classic problem in the optimization literature; see p. 108 of Goldberg's book where it is maximized and also De Jong Function #5 in https://www.sfu.ca/~ssurjano/dejong5.html where the 25 constants are provided) for two dimensions, implementing proportional selection, truncation selection, deterministic tournament selection and linear ranking selection in the same program, offering the user the ability to pick the selection mechanism through a parameter. Use some version of crossover and some version of mutation. For each of the selection algorithms that use a parameter, choose (separately, of course) three different algorithm parameter values, and report results corresponding to the best parameter value for each algorithm (do not report results on all the three settings). Report the three parameter values you used for each algorithm. Report how you determined the best performance out of the three settings (hint: refer to the lectures on metrics).

Extra for the graduate section: The graduate section will also implement stochastic binary tournament selection with three different parameter values.