CS6271 SEM1 2023-4 — Exercise set 1

Student: **Prince, Siddharth**

Initial comment: You did a great job in questions 1 and 2, but presented a crucial mistake right on the implementation of the fitness function for question 3, which brought you to some wrong observations, so please attention.

Assignment Steps	Weight	Score	Mark	Comments
Submission	100%			
Question 1	2	**90%**	1.80	You implemented the problem very well, but the number of individuals processed you found is too big. A great answer to this question is below 10,000. Some tips to reduce your number of individuals processed: running a smaller population for more generations, increasing the probabilities of crossover/mutation. However, I highlight these tips are specific to this problem, and they could not be useful for future problems.
Question 2	2	**100%**	2.00	A great answer to this question is below 3,000, but your answer was relatively close (in this problem we can consider a wide range of results), and you played well with the parameters.
Question 3	6	**50%**	3.00	There is a mistake in the implementation of the fitness function. In the line return (oneSum,) if ONE_MAX_LENGTH/2 <= oneSum else (ONE_MAX_LENGTH - oneSum,), it should be return (oneSum,) if oneSum <= ONE_MAX_LENGTH/2 else (ONE_MAX_LENGTH - oneSum,). As result, you got Max Fitness = 114.0 in generation 0, but since you used ONE_MAX_LENGTH = 200, the maximum fitness possible should be 100 (if your fitness function was correctly implemented). The evolution stopped at generation 0 because this fitness value attended the stopping criteria while max(fitnessValues) < ONE_MAX_LENGTH/2 In your answer to the question on the top of the notebook you wrote "an initial population with fitness values that are in and around half of the possible max fitness value", but actually, if your fitness function were well implemented, the possible max fitness value (100) would be the half of the length (200).
Extra marks				
Penalty				
		Final mark	**6.80**	