Experiment 3:

Genetic Algorithm to optimize a mathematical function (do from Scratch)

(1) Objective function $f(x)= x^3 +9$, here x is integer.
(2) x must be represented in 6 digits of binary number.
(3) Goal: to maximize the objective function.
(4) Encoding Scheme is binary.
(5) Size of population is 10.
(6) Parent selection: Roulette Wheel selection
(7) Single point crossover with probability 0.8
(8) Mutation with probability 0.01
(9) Survival Selection: Replace 20% worse solutions in children (Offspring) Population with 20% best solution in the parent population.