Maximize f (x, y) =80-x^2-y^2+10 cos(2πx) +10 cos(2πy)

**Method1**: Binary Genetic Algorithm or Float Genetic Algorithm

Sequence is as follow

-Initialize a population to pop

Repeat the following sections a given number of times, say Generation

-Population after Roulette Wheeling Selection

-Population after crossover

-Population after mutation

-Population after picking the best chromosome from the previous population if there's one

-Store the best chromosome in current Generation

**Method2:** Hill Climbing

Sequence is as follow

Generate a random chromosome

Repeat the following sections till most fit chromosome found

-Find the most fit neighbor of the initial chromosome

-Check if its more fit than the initial chromosome

-If is less fit than the most fit neighbor, replace it by the given

neighbor and repeat the steps above

-If is more fit stop the infinite loop, optimum point found

**Method2:** Simulated Annealing

Sequence is as follow

Generate a random chromosome

Repeat the following sections till most fit chromosome found

-Pick up a random neighbor of , say

-Check if its more fit than the initial chromosome

-If is less fit than the random neighbor, replace it by the given

neighbor and repeat the steps above

-If is more fit, it still can be replaced by a selection process

-Generate a random number rnd and compare it to

-If rnd < replace by

-If rnd > process ends, is the maximum

**Comparison:** Float Genetic Algorithm is the most efficient as it reaches convergence faster