

```
def fitness-function(sequence):
```

```
    return fitness-value
```

```
population-size = 100
```

```
crossover-rate = 0.7
```

```
mutation-rate = 0.01
```

```
num-iterations = 10
```

```
num-genes = 100
```

```
population = initialize-population(population-size, num-genes)
```

```
for generation in range(num-iterations):
```

```
    fitness-values = [fitness-function(individual) for  
                      individual in population]
```

```
    selected-population = select-population(population,  
                                             fitness-values)
```

```
    offspring-population = (crossover(selected-population[i],  
                                       selected-population[i+1], crossover-rate)
```

```
    for i in range(0, len(selected-population), 2)
```

```
    mutated-population = mutate(offspring-population, mutation-rate) for  
    offspring in offspring-population)
```

```
    print ("Best solution": best-individual)
```

```
    print ("Best fitness": best-fitness)
```

Output:

```
Best solution [-0.8033799 1.99833483 0.46494953  
              2.55857116 0.16386098 2.23798819]
```

```
Best Fitness: 52.86539065842369
```