**Description in pseudocode:**

n - Number of individuals from a population.

m - Number of total generations.

k - Number of individuals that is choosen for the selection of parents.

mm - Total number of parents.

Evolution (int n,int m,int k,int mm)

GenerateInitialPopulation()

for t=1,m

parents= TournamentSelection(k,m)

for i=1,m,i+2

using Order Crossover for crossing 2 parents at a time

End for

for i=1,m

Swap

End for

Sort->Population

Sort->Offsprings

Sort->Mutants

Iterate through Ofsprings and Mutants and add the smallest value to the Population

End for

From the final Population we return the minimum object found.

**Description of the parents, mutants, crossover and survivors:**

For selection of parents I’ve used TournamentSelection(k,n), where n – is the number of parents that need to be selected and k the is the number of individuals that will be selected when we choose a parent.

For crossing over I’ve used Order CrossOver.

For mutation I’ve used Swap.

Survivors are selected based of smaller distance from initial population, offsprings and mutants.

**Tabels:**

Now:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Populations | Generations | Best | Average | Time(10 runs) in secounds |
| 200 | 1000 | 144022 | 153994 | 107.6739436 |
| 100 | 100 | 142186 | 157892 | 10.6717472 |
| 700 | 200 | 131477 | 148991 | 21.8656137 |
| 700 | 700 | 114879 | 135685 | 81.2500848 |
| 1000 | 1000 | 104179 | 126396 | 113.0499848 |

From lab. No. 2:

|  |
| --- |
| Nr. Of iterations = 100 |
| 145405 |
| 141705 |
| 145444 |
| 145854 |
| 141774 |
| 143776 |
| 146920 |
| 148266 |
| 134332 |
| 145224 |

* Best = 134332
* Average = 143,870