e.g. Define population size **N= 3**; Maximum number of generation **G = 2**; **Minimum\_fitness = 2**

**t є G; t=1** :

1. **Generate population from size N=3**

|  |  |
| --- | --- |
| Chromosome 1 | 38 39 47 48 |
| Chromosome 2 | 38 39 48 49 |
| Chromosome 3 | 32 41 60 61 |

1. **For each chromosome i, generate all possible rules:**
2. **Calculate the fitness for each rule.**

|  |  |  |
| --- | --- | --- |
| i=1 : 38 39 47 48 | 38 → 39,47,48 | Sup. = 1/ 88158 = 1.1 |
| 38 → 39,47 | Sup. = 1/88158 =1.1 |
| 38 →47,48 | Sup. = 1/88158 =1.1 |
| 38 → 39 | Sup.= 2/88158 = 2.2 |
| 38 → 47 | Sup. = 1/88158 =1.1 |
| 38,39 → 47,48 | Sup. = 1/88158 =1.1 |
| 38,39,47 → 48 | Sup. = 1/88158 =1.1 |
| 39 →47,48 | Sup. = 1/88158 =1.1 |
| 39 →47 | Sup. = 1/88158 =1.1 |
| 39→ 48 | Sup.= 2/88158 = 2.2 |
| 39,47 →48 | Sup. = 1/88158 =1.1 |
| 47 → 48 | Sup. = 1/88158 =1.1 |
| i=2 : 38 39 48 49 | 38→ 39,48,49 | Sup. = 1/88158 =1.1 |
| 38 →39,48 | Sup. = 1/88158 =1.1 |
| 38 →39 | Sup.= 2/88158 = 2.2 |
| 38 →48 | Sup. = 1/88158 =1.1 |
| 38 →49 | Sup. = 1/88158 =1.1 |
| 38 →48,49 | Sup. = 1/88158 =1.1 |
| 38,39→ 48 49 | Sup. = 1/88158 =1.1 |
| 38,39, 48→ 49 | Sup. = 1/88158 =1.1 |
| 39 →48,49 | Sup. = 1/88158 =1.1 |
| 39 →48 | Sup.= 2/88158 = 2.2 |
| 39 →49 | Sup. = 1/88158 =1.1 |
| 39,48→ 49 | Sup. = 1/88158 =1.1 |
| 48 → 49 | Sup. = 1/88158 =1.1 |

|  |  |  |
| --- | --- | --- |
| i=3 : 32 41 60 61 | 32→ 41,60,61 | Sup. = 1/88158 =1.1 |
| 32 →41,60 | Sup. = 1/88158 =1.1 |
| 32 →41 | Sup. = 1/88158 =1.1 |
| 32 →60,61 | Sup. = 1/88158 =1.1 |
| 32,41→ 60, 61 | Sup. = 1/88158 =1.1 |
| 32,41,60 →61 | Sup. = 1/88158 =1.1 |
| 32 →60 | Sup. = 1/88158 =1.1 |
| 32 →61 | Sup. = 1/88158 =1.1 |
| 41 →60,61 | Sup. = 1/88158 =1.1 |
| 41 →60 | Sup. = 1/88158 =1.1 |
| 41 →61 | Sup. = 1/88158 =1.1 |
| 60 →61 | Sup. = 1/88158 =1.1 |
| 41,60→ 61 | Sup. = 1/88158 =1.1 |

1. **Crossover between i and i+1:**

|  |  |
| --- | --- |
|  | **New chromosomes** |
| 38  **|**39 47 48 | 38 47 48 |
| 38**|** 39 48 49 | 38 39 48 49 |

**4.1**

**4.2 For each reproduced chromosomes, generate all possible rules:**

**4.3 Calculate the fitness for each rule.**