Environment 1 (40 mines, 10 super mines, 1 rock)

|  |  |  |
| --- | --- | --- |
| Iteration Number | Average Mines gathered per sweeper | Deaths |
| 16 | 1.267 | 0 |
| 17 | 1.267 | 0 |
| 18 | 1.267 | 0 |
| 19 | 1.267 | 0 |
| 20 | 1.267 | 0 |
| 21 | 1.267 | 0 |
| 22 | 1.267 | 0 |
| 23 | 1.267 | 0 |
| 24 | 1.267 | 0 |
| 25 | 1.267 | 0 |
| 26 | 1.267 | 0 |
| 27 | 1.267 | 0 |
| 28 | 1.267 | 0 |
| 29 | 1.267 | 0 |
| 30 | 1.267 | 0 |
| 31 | 1.267 | 0 |
| 32 | 1.267 | 0 |
| 33 | 1.267 | 0 |
| 34 | 1.267 | 0 |
| 35 | 1.267 | 0 |
| Average | 1.267 | 0 |

Average Mines Gathered over all sweepers per Iteration = 1.267 \*30 = 38 mines

The numbers stabilise (number of deaths start to becomes 0 sand number of mines gathered is maximum) at about iteration 20. This is the number of iterations needed to learn the behaviour.

Enviroment2 (25 mines, 25 super mines, 1 rock)

|  |  |  |
| --- | --- | --- |
| iterations | Average Mines gathered per sweeper | Deaths |
| 20 | 0.8 | 1 |
| 21 | 0.8 | 0 |
| 22 | 0.8 | 0 |
| 23 | 0.8 | 1 |
| 24 | 0.8 | 0 |
| 25 | 0.8 | 1 |
| 26 | 0.8 | 0 |
| 27 | 0.8 | 1 |
| 28 | 0.8 | 2 |
| 29 | 0.8 | 0 |
| 30 | 0.8 | 0 |
| 31 | 0.767 | 0 |
| 32 | 0.8 | 0 |
| 33 | 0.8 | 0 |
| 34 | 0.8 | 0 |
| 35 | 0.8 | 0 |
| 36 | 0.8 | 1 |
| 37 | 0.8 | 0 |
| 38 | 0.8 | 0 |
| 39 | 0.8 | 1 |
| Average | 0.79835 | 0.4 |

Average Mines Gathered over all sweepers per Iteration = 0.79835\*30 = 23.95 ~ 24 mines

The numbers stabilise (number of deaths start to becomes 0 sand number of mines gathered is maximum) at about iteration 15. This is the number of iterations needed to learn the behaviour.

Environment 3(10 mines, 40 super mines , 1 rock)

|  |  |  |
| --- | --- | --- |
| iterations | Average Mines gathered per sweeper | Deaths |
| 20 | 0.33 | 0 |
| 21 | 0.33 | 0 |
| 22 | 0.33 | 0 |
| 23 | 0.33 | 2 |
| 24 | 0.33 | 0 |
| 25 | 0.33 | 0 |
| 26 | 0.33 | 0 |
| 27 | 0.33 | 1 |
| 28 | 0.33 | 1 |
| 29 | 0.33 | 1 |
| 30 | 0.33 | 0 |
| 31 | 0.33 | 0 |
| 32 | 0.33 | 0 |
| 33 | 0.33 | 0 |
| 34 | 0.33 | 1 |
| 35 | 0.33 | 2 |
| 36 | 0.33 | 0 |
| 37 | 0.33 | 0 |
| 38 | 0.33 | 2 |
| 39 | 0.33 | 0 |
| Average | 0.33 | 0.5 |

Average Mines Gathered over all sweepers per Iteration = 0.33\*30 ~ 10 mines

The numbers stabilise (number of deaths start to becomes 0 sand number of mines gathered is maximum) at about iteration 13. This is the number of iterations needed to learn the behaviour.