

Result Report

A20402686

```
skharage@comet-ln2:~  
Initial Matrix  
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  
0 0 0 1 0 1 1 1 1 0 0 1 1 0 1  
0 1 1 0 0 0 0 0 0 0 1 0 1 1 0  
0 0 1 1 1 0 0 1 0 0 0 1 1 1 0  
1 0 1 1 1 1 0 0 0 1 0 0 1 0 1  
0 1 0 0 1 0 0 0 1 0 0 1 1 0 1  
0 1 0 1 1 1 0 1 0 1 0 0 0 1 0  
0 1 0 1 0 0 0 0 0 1 1 0 1 0 0  
0 0 0 0 1 0 0 0 0 1 1 0 0 0 1  
0 0 1 1 0 1 0 0 0 1 0 0 1 1 1  
0 1 0 0 0 1 1 1 1 1 1 1 1 1 1  
0 1 1 0 0 0 1 0 1 1 0 0 1 0 1  
1 1 0 0 0 1 0 0 0 1 0 1 0 1 0  
1 1 1 1 0 0 0 1 0 0 0 1 0 0 0  
0 0 1 0 1 1 1 1 1 0 0 0 0 1 1  
Matrix at 10 iteration:  
1 1 0 1 1 0 0 0 0 0 0  
1 1 1 0 1 1 1 0 0 0  
0 0 1 0 0 1 0 0 1 0  
0 0 0 0 1 0 1 0 0 0  
0 1 1 1 0 0 1 0 1 0  
0 0 0 0 0 0 0 0 1 0  
0 0 0 0 0 0 0 0 0 0  
1 1 0 0 0 0 0 0 0 0  
0 0 0 0 0 0 0 1 0 0  
1 1 0 0 0 0 1 0 0 0  
Time for 10 iterations: 0.282000 milliseconds  
Matrix at 100 iteration:  
0 0 0 0 0 0 0 0 0 0 0  
0 0 0 0 0 0 0 0 0 0  
0 0 0 0 0 0 0 0 0 0  
0 0 0 0 0 0 0 0 0 0  
0 0 1 1 1 0 0 0 0 0  
0 0 0 0 1 1 1 0 0 0  
0 0 0 0 0 1 0 0 0 0  
1 0 1 0 0 0 0 1 1 0  
0 0 1 0 0 1 0 0 0 1  
1 1 1 1 0 0 0 1 0 0  
Time for 100 iterations: 2.167000 milliseconds  
Matrix at 1000 iteration:  
0 0 0 0 0 0 0 0 0 0 0  
0 0 0 0 0 0 0 0 0 0  
0 0 0 0 0 0 0 0 0 0  
1 0 0 0 0 0 0 0 0 0  
1 0 0 1 0 0 0 0 0 0  
0 0 1 0 0 1 0 0 0 0  
0 0 0 0 0 1 1 0 0 0  
0 0 0 0 0 0 0 0 0 0  
0 0 0 0 0 0 0 0 0 0  
0 0 0 0 0 0 0 0 0 0  
Time for 1000 iterations: 20.216000 milliseconds  
~  
~  
~
```

Here, 10 iterations are performed in 0.2820 milliseconds.

100 iterations are performed in 2.1670 milliseconds.

1000 iterations are performed in 20.2160 milliseconds.

For serial code, time required is about 25 milliseconds for 1000 iterations. Hence to perform the problem of game of life, we need faster execution which is implemented by CUDA.

There are two leading GPGPU frameworks i.e. CUDA and OpenCL. CUDA is a closed Nvidia framework, it's not supported in as many applications as OpenCL, but where it is integrated top quality Nvidia support ensures unparalleled performance.