

The display thread module shown below prints cell states of successive generations of the GameOfLifeArray stream module.

```
class display: public threadModule
{
    inputStream<bool> inStrm[nROWS][nCOLS];    // Input streams
    void code()                                // Thread-domain code
    {
        int g, r, c;
        bool cellState;

        for (g = 0; g < nGENERATIONS; ++g)    // Print generations
        {
            printf( "\nGENERATION %d", g );
            for (r = 0; r < nROWS; ++r)
            {
                printf( "\n" );
                for (c = 0; c < nCOLS; ++c)
                {
                    inStrm[r][c] >> cellState; // Get cell state
                    printf( "%s", ((cellState == 0) ? " -" :
                                   " X" ) );
                }
            }
            printf( "\n" );
        }
        printf( "\nDone\n\n" );
        endTopology(0);
    }
};
```

Some observations about display:

- The thread-domain code for display gets cell states from inStrm in *row-major order*¹, and prints to the console in the same order.
- For each generation, display prints a grid of '-'s and 'X's with '-' representing a *dead* cell and 'X' representing a *live* cell.
- The statement

```
    endTopology(0);
calls the module member function
    void endTopology( int result )
```

The call causes:

¹ https://en.wikipedia.org/wiki/Row-_and_column-major_order

- *All thread modules in the TruStream topology to which display belongs to cease execution.*
- *The TruStream topology to which display belongs to be torn down.*
- *A completion signal to be sent to any wait() that is waiting for completion of the topology.*