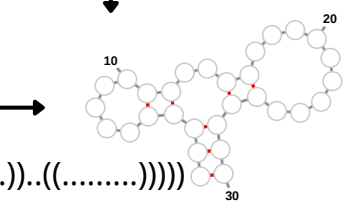
START

(((((.....))..((.....)))))

B: 1-30, 2-29, 3-28, 4-12, 5-11, 15-27, 16-26 | ***U***: 6, 7, 8, 9, 10, 13, 14, 17, 18, 19, 20, 21, 22, 23, 24, 25



(((((.....))..((.....)))))

ON

Activate Random Mutation

50%

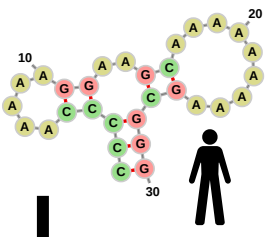
50%

( ) → GC / CG

. → A

Top-50 sequences

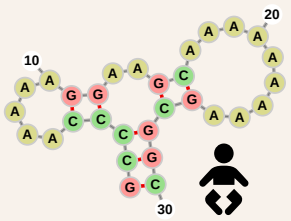
CG,CG,CG,CG,CG,GC,CG | AAAAAAAAAAAAAAAA



Position

Default

CG,CG,CG,CG,CG,GC,GC | AAAAAAAAAAAAAAAA



( ) → GC / CG

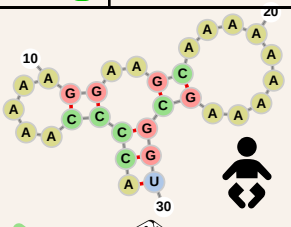
. → A

or

ON

Random Mutation on. Once activated, it remains in this state

CG,CG,CG,CG,CG,GC,AU | AAAAAAAAAAAAAAAA



( ) → Any

Sort $f(x)$ $f(x)$ — Sorting depends on algorithm state → Best

= becomes **for next loop**

= Enough # of Solutions

Base-pair distance = 0

One of the 50 best sequences?

Yes

Insert

List of valid sequences

minGC <= GC-content <= maxGC

# of Solutions +1.
Activate Random Mutation ON

GCCGGAAAAACCAACCAAAAAAAAAGGGGC
CGCGCAAAAAGCAACGAAAAAAAAACGGCG
CGCCCAAAAAGGAAGCAAAAAAAAAGCGCG
GCCGGAAAAACCAACGAAAAAAAAACGGGC

Exit and return list of sequences

No

Stagnation reached?

Yes