

COREWAR

COREWAR GLOBAL MASTERS 1

February 10 - 13, 2022 (Registration until: February 7, 2022)

Corewar is played between two or more programs (hereinafter referred to as "warriors") written in Redcode, a low-level language similar to assembly. Players write a warrior to eliminate all opponents in the memory of the MARS virtual computer. Corewar is a perfect game for either creating warriors by hand or using genetic programming to develop them.

Tournament Format

- Three tournament rounds are played to qualify for the Grand Final
- The winner of each tournament round is automatically qualified for the Grand Final
- Tournament points are the normalized scores, calculated as in the corewar online hills KOTH and SAL with the score formula: $(W*W-1)/S$
- For every tournament round only the better scoring warrior of each player counts for the tournament points
- Eight players advance to the Grand Final:
 - The winners of the three tournament rounds
 - The five players with the most tournament points (the number is increased if there is a repeat winner of the tournament rounds)
- If two players have equal tournament points the highest individual normalized score counts
- The winning player of the Grand Final is declared as the **Champion of the Corewar Global Masters 1**
- All remaining players will advance to the Lower Rank Decision under the same rules as the Grand Final

- The MARS (Memory Array Redcode Simulator) **CoreWin 2.3** is used for the entire tournament

```
Source
pStep1 equ 561
bStep1 equ 4633
sAway equ 4854
pAway equ 562
zero equ qbomb
qtab3 equ qbomb
qbomb dat >qoff , >qc2
wGo mov hBomb , wGo+sAwa3
spl j2 , <qb1

Load File
0000 DAT.F >-06 >-7327
0001 MOV.I $26 $4865
0002 SPL.B j2 <-6841
0003 SPL.B $1 <-6598
0004 SPL.B $0 <-6355
0005 MOV.I <16 <2
0006 MOV.I {31 {3
0007 SPL.B $0 $4854
0008 SPL.B $-1 <3326
0009 DJN.F $560 <7851
0010 DAT.F $0 $0
0011 DAT.F $0 $0
0012 DAT.F $0 $0
0013 DAT.F $0 $0
0014 DAT.F $0 $0
```

How to Participate?

- In order to register for the tournament, you must send your 8 warriors (two warriors each for the three tournament rounds and the two warriors for the Grand Final / Lower Rank Decision) to the following email: fizmo@corewar.info. As soon as the warriors are successfully compiled with CoreWin 2.3 you will receive a reply that your registration was successful.
- The **deadline for registration** is:

Monday, February 7, 2022, by 6pm CET

- All warriors must be in accordance with the ICWS '94 Standard. See also:
 - <http://www.koth.org/info/pmars-redcode-94.txt>
 - <http://www.koth.org/info/icws94.html>
- All warriors must be sent as separate txt-files that can be successfully compiled with CoreWin 2.3 and which can be clearly assigned to a tournament round by their file name
- The use of Predefined Variables (e.g., CORESIZE, MAXPROCESSES, MAXCYCLES etc.) are disallowed
- All warriors must start with the following comment lines:
;redcode
;name <enter here your warrior's name>
;author <enter here your (nick)name>

Live Broadcast on Twitch

Round 1:	February 10, 7pm CET
Round 2:	February 11, 7pm CET
Round 3:	February 12, 7pm CET
Lower Rank Decision:	February 13, 6pm CET
Grand Final:	February 13, 8pm CET

<https://www.twitch.tv/corewarglobal>

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THE TOURNAMENT ROUNDS

Round 1 Rules

Prove it Twice!

The first round is divided into two parts.

1. All warriors fight against each other in round robin mode.
2. All warriors fight against a benchmark of 20 warriors, that is available for download here: (<http://www.corewar.info/tournament/CGM1/>)

The normalized scores of both parts are added and the warrior with the highest points is the winner.

Battle Parameters:

Core Size: 8000
Max Cycles: 80000
Max Processes: 64
Max Length: 100
Min Distance: 100
Read Limit: Core Size
Write Limit: Core Size
P-Space: disallowed

Warrior Positions:

RNG Seed: via a random number generator online tool before round starts

Initial Instruction:

DAT 0, 0

Tournament Options:

Rounds per match: 1000
Part 1: Round Robin (no Self Fights)
Part 2: Benchmark

The tournament points are the normalized scores of both parts.

Round 2 Rules

Larger than Nano

All warriors fight against each other in round robin mode.

The top scoring half of warriors fight each other another time in round robin mode.

The warrior of this match with the highest normalized score is the winner.

Battle Parameters:

Core Size: 160
Max Cycles: 1600
Max Processes: 160
Max Length: 6
Min Distance: 6
Read Limit: Core Size
Write Limit: Core Size
P-Space: disallowed

Warrior Positions:

RNG Seed: via a random number generator online tool before round starts

Initial Instruction:

DAT 0, 0

Tournament Options:

Rounds per match: 1000
Part 1: Round Robin (no Self Fights)
Part 2: Round Robin (no Self Fights)

The tournament points are the normalized scores of the first part plus the normalized scores of the second part subtracted by the normalized score of the 16th placed warrior.

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THE TOURNAMENT ROUNDS

Round 3 Rules

Everything About 8

All warriors fight against each other in round robin mode.

The top scoring half of warriors fight each other another time in round robin mode.

The warrior of this match with the highest normalized score is the winner.

Battle Parameters:

Core Size: 8000
Max Cycles: 80000
Max Processes: 8000
Max Length: 80
Min Distance: 80
Read Limit: Core Size
Write Limit: Core Size
P-Space: disallowed

Warrior Positions:

RNG Seed: via a random number generator online tool before round starts

Initial Instruction:

DAT 0, 0

Tournament Options:

Rounds per match: 800
Part 1: Round Robin (no Self Fights)
Part 2: Round Robin (no Self Fights)

The tournament points are the normalized scores of the first part plus the normalized scores of the second part subtracted by the normalized score of the 16th placed warrior.

Round 3 Rules

Everything About 8

Programming Restrictions:

In the instructions A- and B-fields of the warrior sent for this tournament round only values between -8 and 8 are allowed.

Example of a compiled warrior that **met** the requirements:

```
MOV.I      {-1,   <5  
MOV.I      {-2,   <4  
MOV.I      {-3,   <3  
MOV.I      {-4,   <2  
JMN.B      $-4,  {-5
```

Example of a compiled warrior that **failed** to meet the requirements:

```
SPL.B      $42,  {3  
MOV.I      }2,   }-1  
MOV.I      $3,   >-12  
MOV.I      $3,   }-3  
JMZ.F      $-4,  *-1
```

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THE TOURNAMENT ROUNDS

Grand Final Rules

The Tiny Survival

All warriors fight against each other in round robin mode. The warrior with the lowest score is eliminated and the remaining warriors fight each other again in round robin mode. This is repeated until there are only two warriors left.

The last two warriors then fight for victory of the tournament in the final.

Battle Parameters:

Core Size: 800
Max Cycles: 8000
Max Processes: see Special Rules
Max Length: 20
Min Distance: 20
Read Limit: Core Size
Write Limit: Core Size
P-Space: disallowed

Warrior Positions:

RNG Seed: via a random number generator online tool before round starts

Initial Instruction:

DAT 0, 0

Tournament Options:

Rounds per match: 800
Survival: Round Robin (no Self Fights)

Grand Final Rules

The Tiny Survival

Special Rules:

The Max. Processes is reduced with every round robin round:

Round	Max. Processes
1	744
2	568
3	440
4	344
5	256
6	192
7	128
8	88
9	64
10	48
11	32
12	24
13	16
14	8
15	4

In case of a tie between the bottom two warriors 1.) a winner is declared by running the round only with these two warriors. In case of a tie this can be repeated up to five times then 2.) a winner is declared by the combined points of the previous rounds if this is a tie then 3.) a winner is declared by a coin toss.

Lower Rank Decision:

Played like the Grand Final except:

If more than 16 warriors: In the first round all warriors ranked 16 and lower are eliminated.

If less than 16 entries: Lower Rank Decision begins at a later round setting.