



# Artificial Intelligence BattleGround

# Serpent Showdown

Brought to you by the *Topic team*

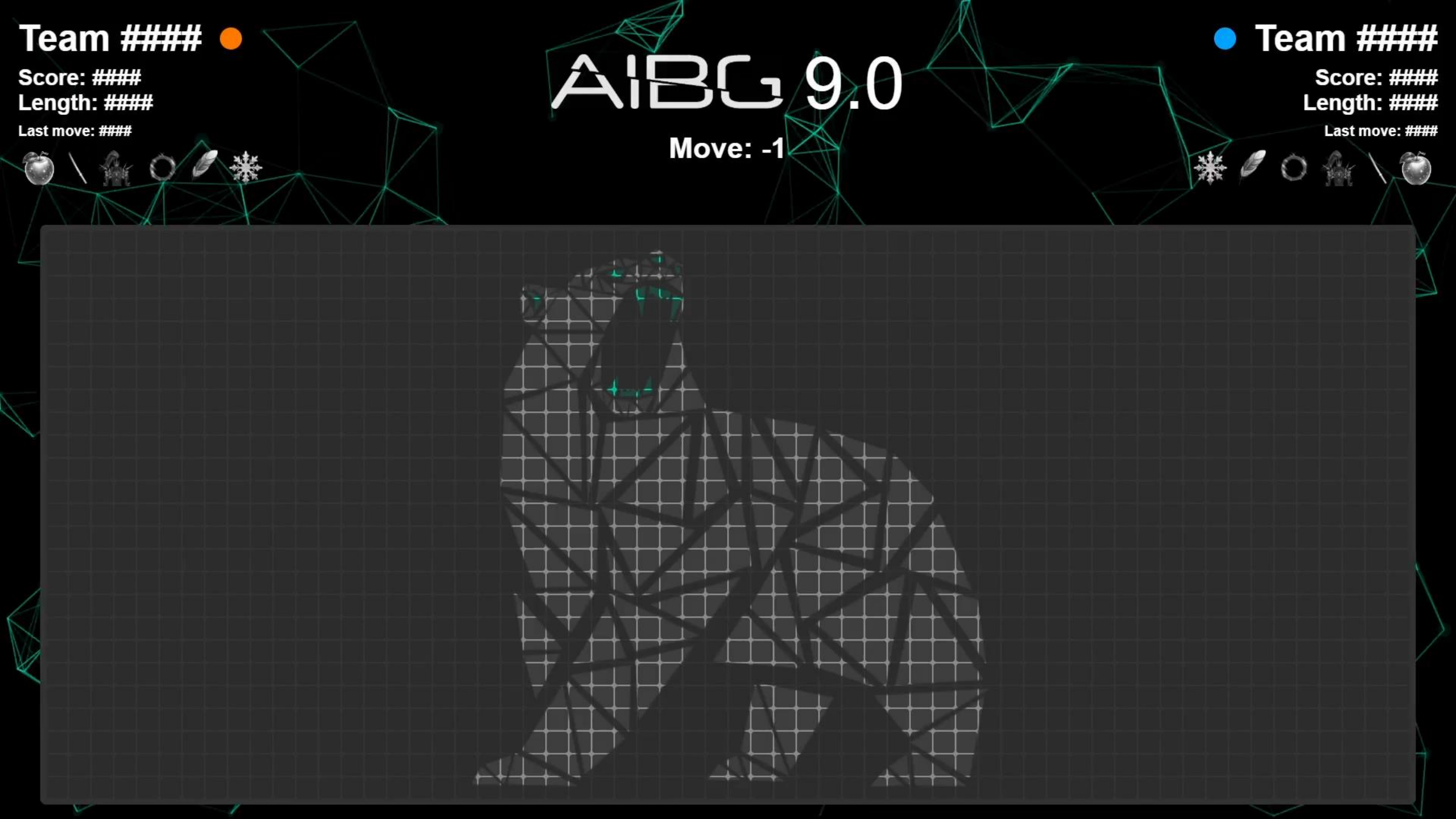


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Team #### ●

Score: ####

Length: ####

Last move: ####



# AIBG 9.0

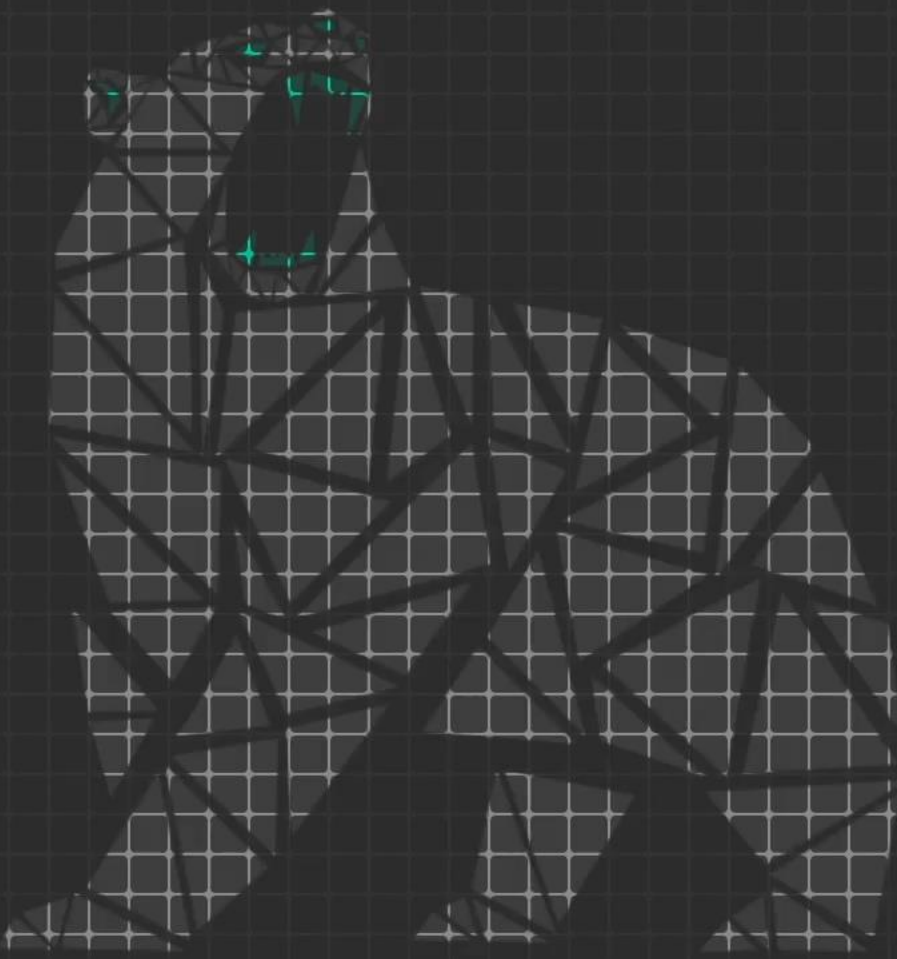
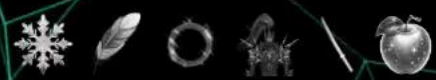
Move: -1

● Team ####

Score: ####

Length: ####

Last move: ####





# General overview (1)



## Players

- Start with a length of 9 on opposite sides of the board facing the center
- Starting score is 1000
- Side is determined randomly upon connection

## Board

- Size is 25 (rows) x 60 (columns)

Uno ●

Score: 1000

Length: 9

Last move: ###



AIBG 9.0

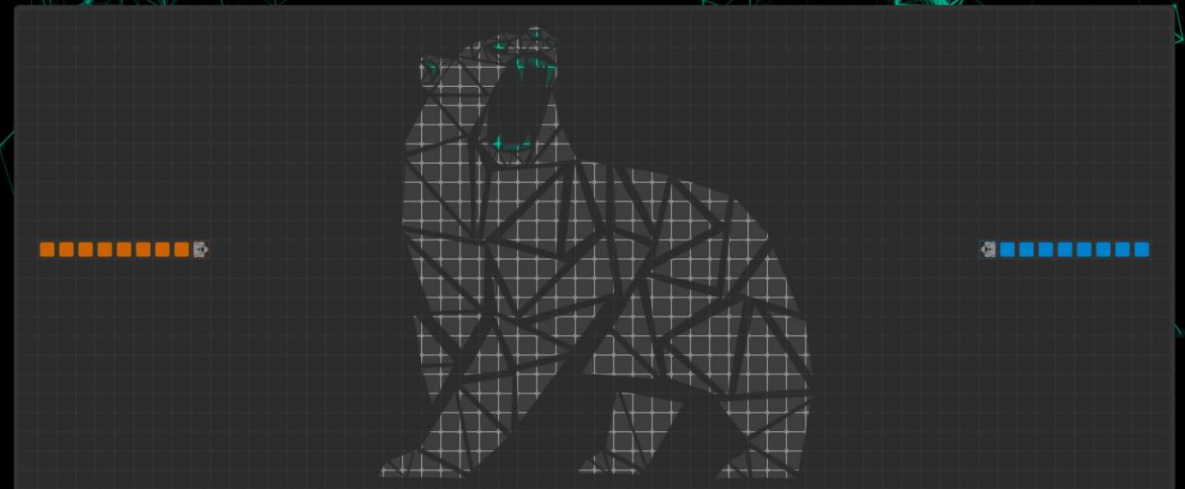
Move: -1

● Duo

Score: 1000

Length: 9

Last move: ###



# General overview (2)



## Border

- Starts shrinking at move 100
- Shrinks by one horizontally (on each side) every 10 moves
- Shrinks also vertically when aspect ratio 1x1 of board is reached
- Stops shrinking when board size reaches 19x20
- If part of the body gets cut off by the border, the rest of the body turns to apples

Items spawn on mirrored positions on both sides of the board

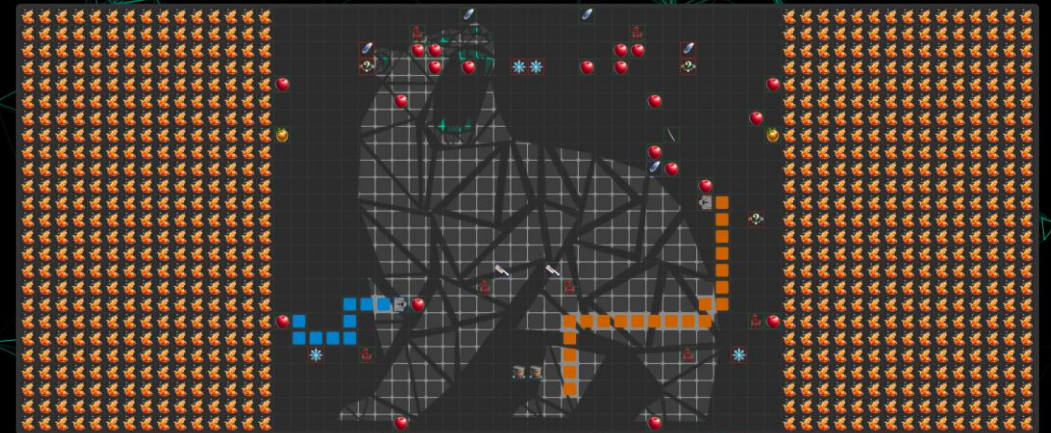
- Apples spawn every 5 moves
- Other items have a 10% chance of spawning on any move

Uno  
Score: 6300  
Length: 23  
Last move: LEFT



AIBG 9.0  
Move: 249

Duo  
Score: 6530  
Length: 10  
Last move: RIGHT





# Win conditions

Make the other agent collide (with himself/you/wall/border)

Make the other player score reach 0

Game ends after 900 moves

- Winner is the agent with a higher score
- If scores are equal, winner is determined by length











# Rewards & Penalties

Rewards & Penalties	Score
Moving towards the center	+ 20
Moving away from the center	+ 10
Playing invalid move	- 50
Move timeout exceeded	- 50
Playing reverse direction move	- 30
Body segment lost	- 30

# Items

10% chance of spawning on any move (except apple)

Affect „Random” will be changed to self/enemy/both upon spawning

Sprite	Name	Type	Duration (moves)	Pick up reward	Affect	Spawn weight
	Apple	apple	1	50	Self	Every 5 moves
	Golden apple	golden-apple	5	70	Self	9
	Katana	katana	10	60	Self	7
	Armour	armour	15	60	Self	7
	Shorten	shorten-XX	1	30	Random	4
	Tron	tron	15	50	Random	3
	Freeze	freeze	8	30	Enemy	4
	Leap	leap	5	80	Random	5
	Nausea	nausea	1	90	Enemy	7
	Reset borders	reset-borders	1	30	Map	1



# Your task

During the next 20 hours, create an AI agent that will go head-to-head against other agents in a 1v1 in our custom-made game

Agent can be coded in ANY programming language

- As long as you are able to connect the server via web sockets (*topic manual*)

You may use any tools (including LLM-s) at your disposal

You may NOT receive any outside help

Battles will be held in a tournament format

- 3 rounds per matchup

# Sidenotes

Tomorrow morning, we will come to you to test connecting to the cloud server

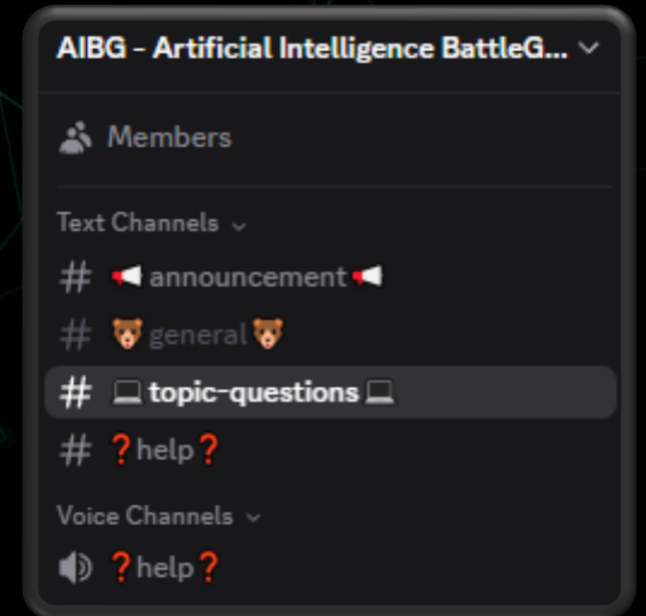
For technical details, consolidate the *Topic manual*

## Communication via Discord

- Change your username to „*First name | Team name*”

At least one member of the team must always be present

- Otherwise, you will be disqualified



# Questions?

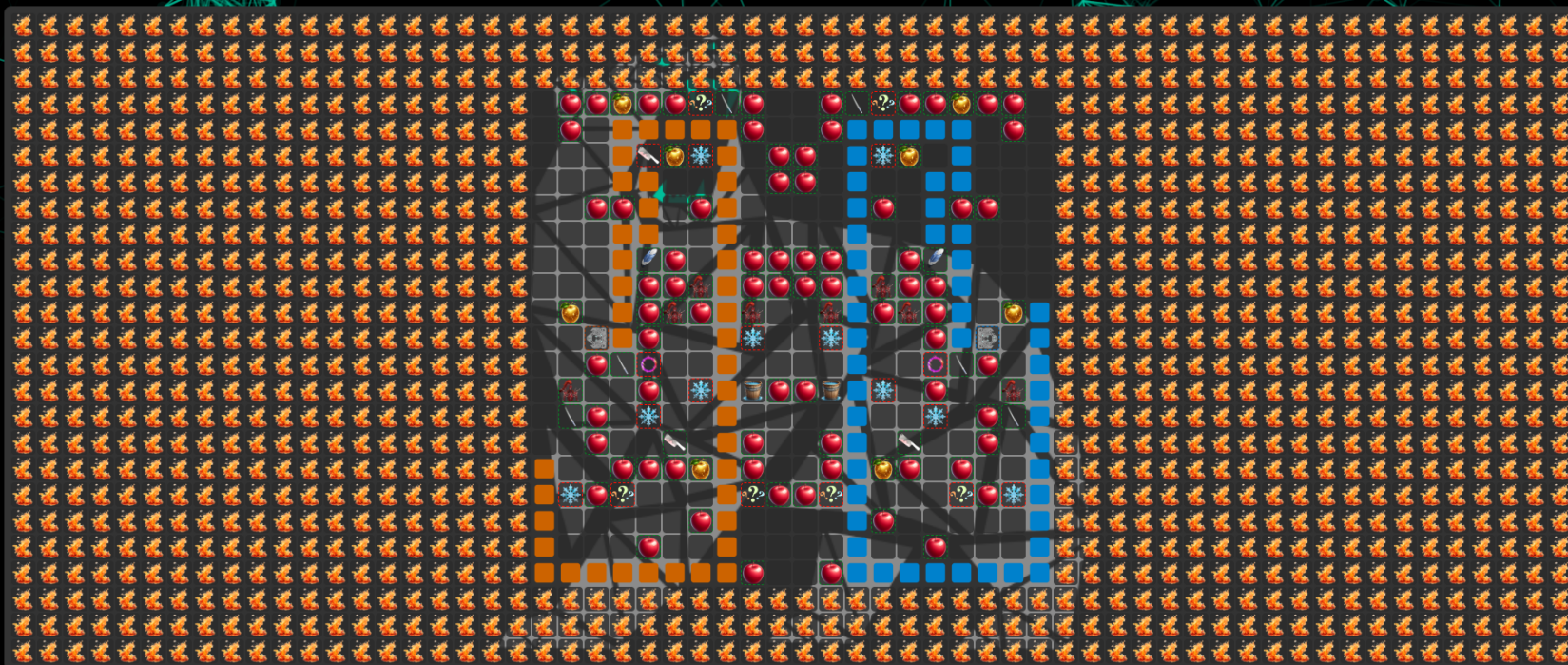
Uno ●  
Score: 9850  
Length: 45  
Last move: LEFT



AIBG 9.0

Move: 608

● Duo  
Score: 12500  
Length: 51  
Last move: RIGHT





The background features a complex, abstract pattern of thin, light-green lines forming various geometric shapes, primarily triangles and polygons, scattered across a solid black field. These shapes are interconnected, creating a web-like or crystalline structure that resembles a low-poly mesh or a molecular model. The overall effect is a dynamic and modern digital aesthetic.

**GOOD LUCK!**