

PLAYER 1 

HIGHSCORE 1555042

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RUSH HOUR

START

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INTELIGÊNCIA ARTIFICIAL

MENU

← 01

diamond 07

★ 12



TOPICS



AGENT OPERATION

 $f(x)$ 

TREE_SEARCH



GAME ANALYSIS

FIRST PROBLEMS FACED

IN THE FIRST PHASE OF THIS PROJECT, WE FACED SEVERAL PROBLEMS AND WE TRIED TO FIND THE BEST SOLUTIONS TO FIX THEM. THE SEARCH WAS VERY SLOW IN THE FIRST PLACE AND IT WAS HARD TO UNDERSTAND THE PROVIDED CODE, SO WE FIND IT EASIER TO START THE DEVELOPMENT OF THIS PROJECT BY REWRITING THE CODE. AFTER FINDING THE PURPOSE OF THIS PROJECT, WE DEVELOPED THE BEST FUNCTIONS TO SOLVE THE RUSH HOUR GAME EFFICIENTLY AND INTELLIGENTLY.

MENU

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12



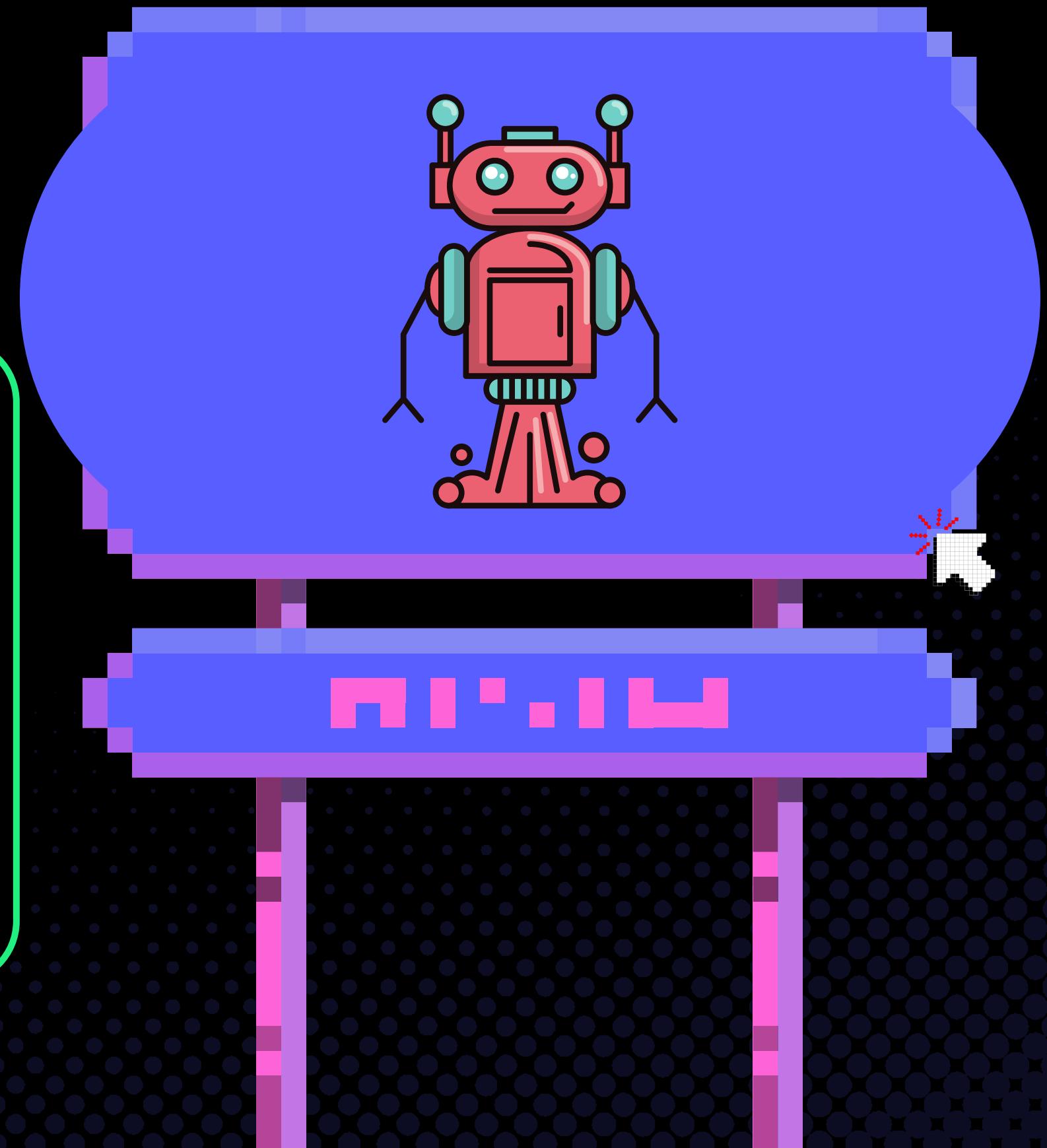
AGENT OPERATION

ACTIONS() ✨ RETURNS ALL POSSIBLE CURRENT MOVES, ONE OF THE MOST EXPENSIVE FUNCTIONS, SO WE FOUND WAYS TO SKIP SOME STEPS BY DOING INTELLIGENT CHECKS.

RESULT() ✨ WE USED A STRING TO SAVE THE STATE, SO IT BECAME PRETTY EASY AND FAST TO CALCULATE THE NEW STATE

COST() ✨ RETURNS THE DISTANCE OF THE CURRENT MOUSE POSITION TO THE PIECE IN THE ACTION

HEURISTIC() ✨ THIS ONE IS SIMPLE, IT JUST COUNTS THE NUMBER OF CARS BETWEEN THE PLAYER AND THE GOAL



MENU



TREE_SEARCH

BACK



◆ SEARCH()

Until there are no more open_nodes or this function finds the goal, it will keep calculating new possible nodes. It pops the first element from the list and then adds the next possible nodes to it using `insert_left()`

◆ INSORT_LEFT()

At this function, we are adding numbers to a sorted list so we found a type of binary search as the best possible solution (we used binary search to find the new element position and then insert it on that position).



★★★★★

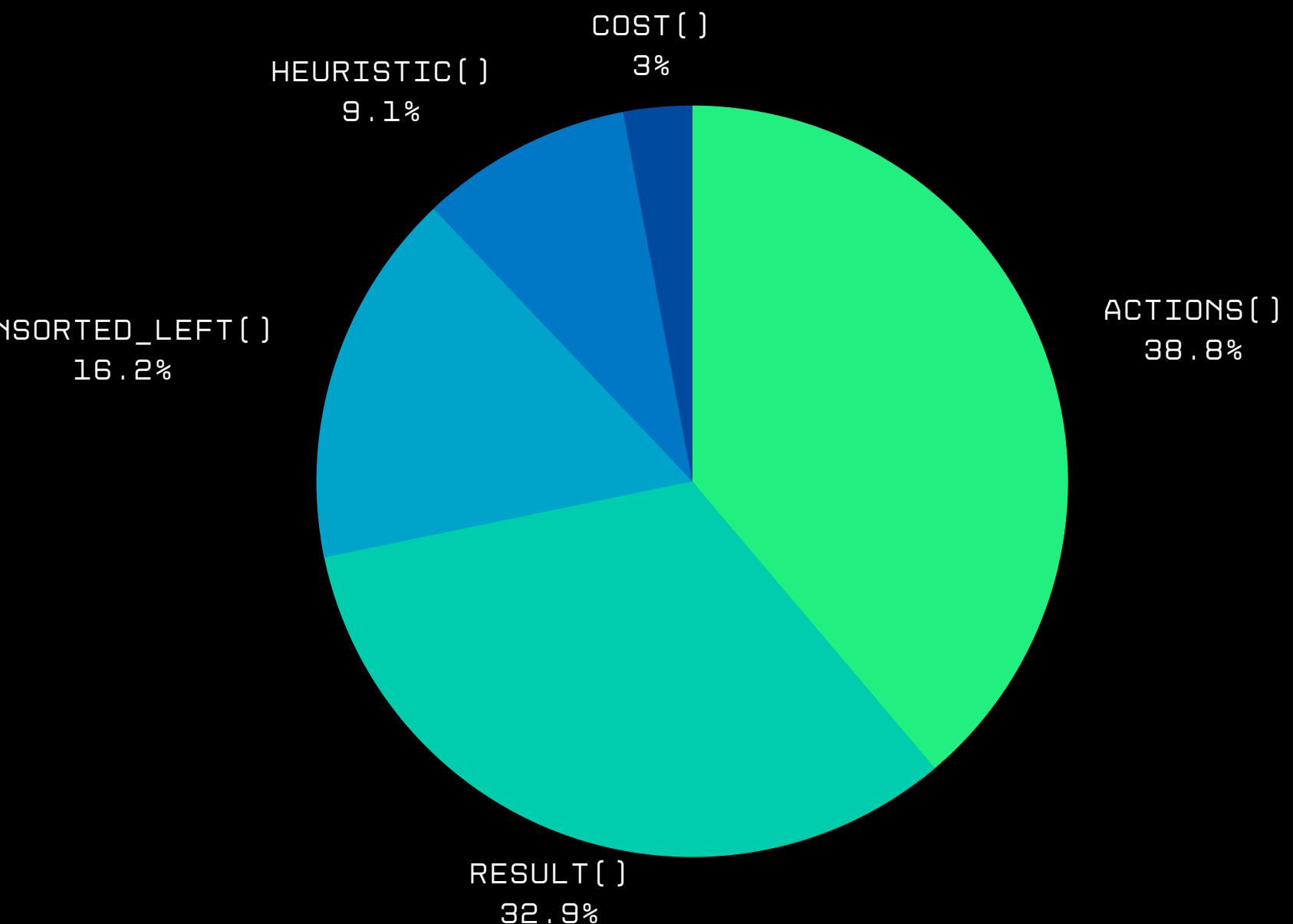
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GAME ANALYSIS

Since we had the txt file with the levels in it, we created a script capable of, individually, testing the artificial intelligence aided by a profiler tool called 'SNAKEVIZ' and the results are presented on the next graphic.

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