

AI Assignment – 02

I have played 10 rounds of the Tic-tac-toe game with each algorithm and noted the result (Nagmani vs Computer)

Reinforcement Learning Result;

Rounds	Winner	Remark
Round-1	Nagmani	Nagmani won in 4 th move.
Round-2	Nagmani	Nagmani won in 4 th move.
Round-3	Computer	The computer won because Nagmani made a mistake.
Round-4	Computer	This time the computer won intelligently.
Round-5	Draw	There was equal effort from both sides.
Round-6	Nagmani	Nagmani won in 5 th move.
Round-7	Computer	The computer won in 3 rd move.
Round-8	Draw	There was equal effort from both sides.
Round-9	Draw	There was equal effort from both sides.
Round-10	Nagmani	Nagmani won in 3 th move.

Conclusion:

Human has won 4 times and the computer won 3 times and Draw 3 times. This shows relatively balanced competition between humans and computers. However, the algorithm may benefit from further optimization.

Min-Max Algorithm Result;

Rounds	Winner	Remark
Round-1	Draw	Both have put in equal effort.
Round-2	Draw	Both have put in equal effort.
Round-3	Draw	Both have put in equal effort.
Round-4	Computer	This time the computer won because the human made a mistake.
Round-5	Draw	Both have put in equal effort.
Round-6	Draw	Both have put in equal effort.
Round-7	Computer	This time the computer won because the human made a mistake.
Round-8	Draw	Both have put in equal effort.
Round-9	Draw	Both have put in equal effort.
Round-10	Draw	Both have put in equal effort.

Conclusion:

The computer has won 2 times and Draw 8 times. This shows that a computer is playing optimally because the computer is not going to lose either win or draw. Humans can make mistakes twice or thrice in 10 rounds game but the computer is not going to make mistakes. So, we can say that min-max is a better approach than reinforcement learning.