# Project Report

Question 2 run\_game (new\_player, basic\_player)

New vs Basic Player

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MINI-MAX evaluated 4107 boards (nodes expanded) to select column 1

Player 1 (☺) puts a token in column 1

0 1 2 3 4 5 6

0 ☺ ☺

1 ☻ ☻

2 ☻ ☻

3 ☺ ☻

4 ☻ ☺

5 ☺ ☺ ☺

MINI-MAX evaluated 2485 boards (nodes expanded) to select column 2

Player 2 (☻) puts a token in column 2

0 1 2 3 4 5 6

0 ☺ ☺

1 ☻ ☻

2 ☻ ☻

3 ☺ ☻

4 ☻ ☺ ☻

5 ☺ ☺ ☺

MINI-MAX evaluated 1704 boards (nodes expanded) to select column 2

Player 1 (☺) puts a token in column 2

0 1 2 3 4 5 6

0 ☺ ☺

1 ☻ ☻

2 ☻ ☻

3 ☺ ☻ ☺

4 ☻ ☺ ☻

5 ☺ ☺ ☺

MINI-MAX evaluated 1687 boards (nodes expanded) to select column 3

Player 2 (☻) puts a token in column 3

Win for ☻!

0 1 2 3 4 5 6

0 ☺ ☺

1 ☻ ☻

2 ☻ ☻

3 ☺ ☻ ☺

4 ☻ ☺ ☻

5 ☺ ☺ ☺ ☻

Execution time for new player : 153.977788

Question 2 run\_game (alphabeta\_player, basic\_player)

Alpha-Beta vs Basic Player

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Alpha-beta evaluated 4107 boards (nodes expanded) to select column 1

Player 1 (☺) puts a token in column 1

0 1 2 3 4 5 6

0 ☺ ☺

1 ☻ ☻

2 ☻ ☻

3 ☺ ☻

4 ☻ ☺

5 ☺ ☺ ☺

MINI-MAX evaluated 2485 boards (nodes expanded) to select column 2

Player 2 (☻) puts a token in column 2

0 1 2 3 4 5 6

0 ☺ ☺

1 ☻ ☻

2 ☻ ☻

3 ☺ ☻

4 ☻ ☺ ☻

5 ☺ ☺ ☺

Alpha-beta evaluated 1704 boards (nodes expanded) to select column 2

Player 1 (☺) puts a token in column 2

0 1 2 3 4 5 6

0 ☺ ☺

1 ☻ ☻

2 ☻ ☻

3 ☺ ☻ ☺

4 ☻ ☺ ☻

5 ☺ ☺ ☺

MINI-MAX evaluated 1687 boards (nodes expanded) to select column 3

Player 2 (☻) puts a token in column 3

Win for ☻!

0 1 2 3 4 5 6

0 ☺ ☺

1 ☻ ☻

2 ☻ ☻

3 ☺ ☻ ☺

4 ☻ ☺ ☻

5 ☺ ☺ ☺ ☻

Execution time for Alpha-Beta player : 134.559176