Assignment 3: Adversarial Search

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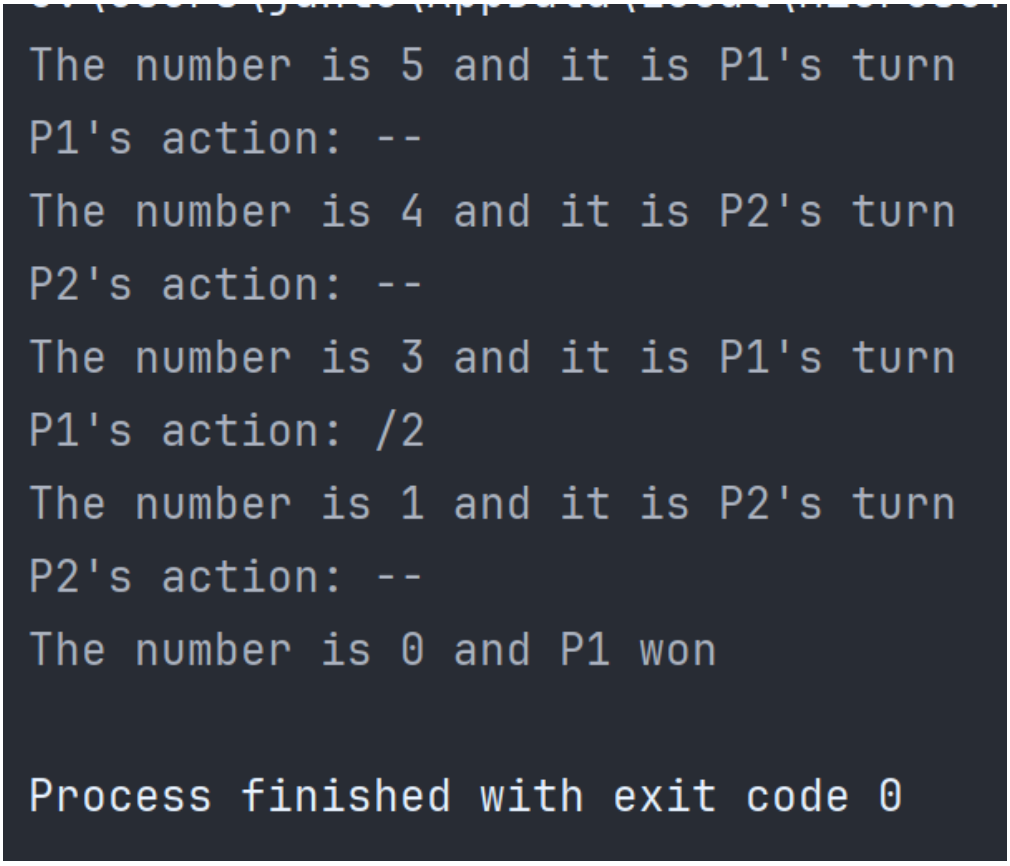

Figure 1: Terminal output for a sample run of the halving game.

```
The state is (0, ['A', 'B', 'C']) and it is P1's turn
P1's action: B
The state is (1, [3, 1]) and it is P2's turn
P2's action: 1
The state is (0, [1]) and P1's utility is 1

Process finished with exit code 0
```

Figure 2: Terminal output for a sample run of the bucket game.

```
It is P1's turn to move
P1's action: (1, 2)

 x | x | o
---+---+---
 o | o | x
---+---+---
 x |   |

It is P2's turn to move
P2's action: (2, 1)

 x | x | o
---+---+---
 o | o | x
---+---+---
 x | o |

It is P1's turn to move
P1's action: (2, 2)

 x | x | o
---+---+---
 o | o | x
---+---+---
 x | o | x

The game is a draw

Process finished with exit code 0
```

Figure 3: Terminal output for a sample run of tic-tac-toe. This is not the entire output, as the game tree is quite large.

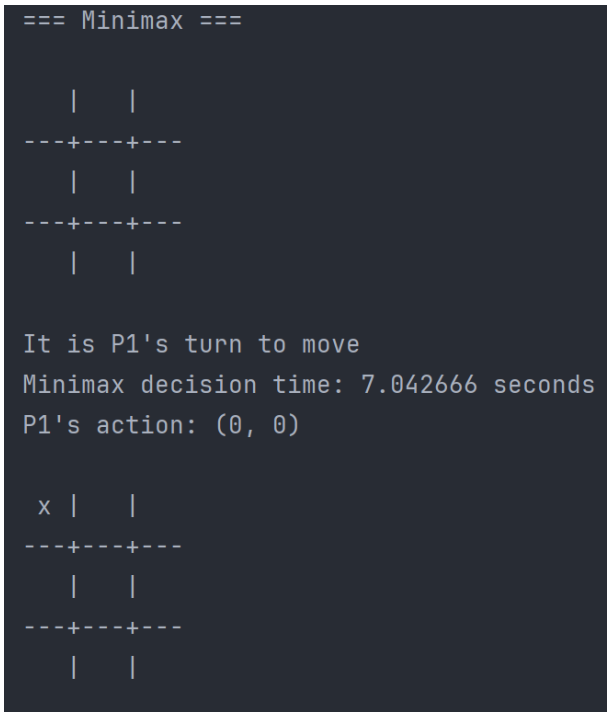

Figure 4: Terminal output showing the decision time for the minimax algorithm for the first move.

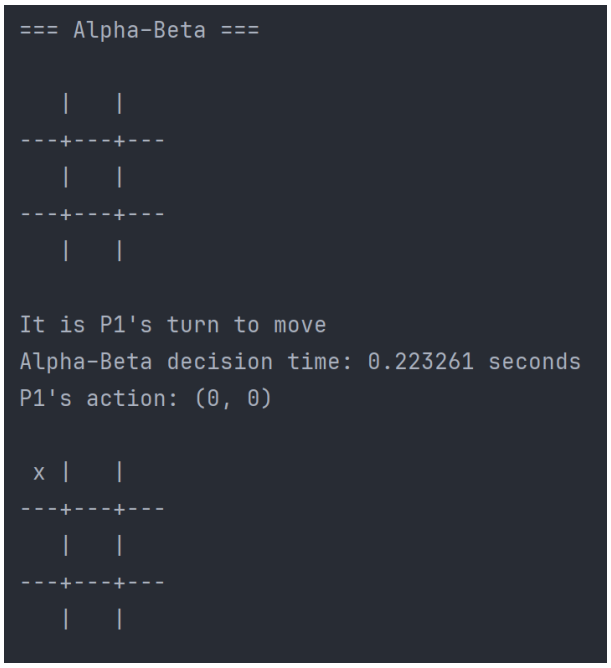

Figure 5: Terminal output showing the decision time for the alpha–beta pruning for the first move.