Engenharia Informática

Inteligência Artificial

MONTA-CARGAS

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**ABSTRACT**

No âmbito da cadeira de Inteligência Artificial foi proposto a elaboração de um programa que resolva puzzles do jogo Monta-Cargas, recorrendo a algoritmos de procura informados e não informados. Este artigo descreve a maneira como implementámos a resolução do jogo.

**Environment**

Este projeto foi um implementado no Netbeans e compilado para o Java 1.8. O Computador usado para os testes fui um Acer Aspire 5741ZG com um processador Pentium(R) CPU P6000 a 1.87GHz, 2 Cores, com 4.0 GB de RAM e com o Windows 10 64 bits.

**Algorithms**

Neste projeto usámos os algoritmos de pesquisa para resolução de problemas, entre os quais:

Algoritmos Não Informados:

* Breadth First Search
* Depth First Search
* Depth Limited First Search

Algoritmos Informados:

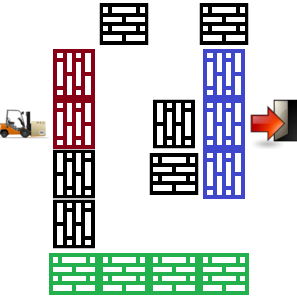
* A\* Search
* IDA\* Search
* Beam Search
* Greedy Best First Search
* Iterative Deepening Search
* Uniform cost search

**MONTA-CARGAS**

O MONTA-CARGAS é baseado no Mouse um jogo para a mobile em que o objetivo consiste em descobrir a sequência de ações que permita deslocar um conjunto de caixas de modo a desobstruir o caminho entre o rato e a sua toca presenteando o jogador com a pontuação máxima caso este consiga descobrir a solução com o menor numero de ações possível.

No MONTA-CARGAS o conceito é o mesmo apenas substituímos o rato por um monta-cargas e a toca pela porta do armazém. A figura seguinte mostra uma possível configuração inicial do jogo. A saída encontra-se sempre do lado direito e o monta-cargas só se pode mover para a esquerda ou para a direita. O Armazém contém um conjunto de caixas que só se podem mover em linha reta dependendo da sua orientação (verticalmente ou horizontalmente).

Em cada estado só se pode mover uma peca do jogo para uma posição adjacente caso essa posição não esteja ocupada por outra peca, à exceção do monta-cargas, pois este pode mover-se para cima da porta terminando assim o jogo.



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# ACKNOWLEDGMENTS

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