Your report needs to explain at least the following:

* Which heuristics did you use for the A\* algorithm?
  + We used the heuristic of determining the amount of boxes that are not in their place
  + For the inconsistent we used a random value for each node that can be either good or bad
* Test your program with a couple of different problems. Increase the size of the problem to test the limits of your program. Make a table comparing **how many nodes are searched** to find the answer for each problem. For this table, you should compare a number of different problems (at least 3) to avoid a statistical bias. Which of the three algorithms (UCS, A *with consistent and and A* with an inconsistent heuristic) searches the least nodes and which one take the most?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Max | Initial State | Goal State | UCS visited | A\* consistent visited | A\* inconsistent visited |
| 4 | (A, B); (C, D); (); | (A, B, C); X; X | 17 |  |  |
| 3 | (); (A, C); (B); | (B); (A); (C); |  |  |  |
|  |  |  |  |  |  |

* Why does this happen?
* Which algorithms are optimal? Why?
  + UCS is optimal because it does all the comparisons and looks always for the optimal result, but having an heuristic it is supposed to make things faster
* In your opinion, what are the benefits of simpler algorithms versus more complex ones?
  + Simpler algorithms are easier to understand and to program, more complex ones require more time to think of for example in a good heuristic that makes the program better and require also to think on limitations of the tools used.