Programming Assignment 2
Questions
For this programming assignment you have to implement the algorithm that expands the basic planning graph for a given planning problem. To answer the questions below you have to extract some numbers from the generated graph.

The example we will use is from the DWR domain. However, we will use modified version of the domain which does not contain operators with negative preconditions. Similarly, there is a modified version of the problem you will have to use.

The following hints might be helpful:

- The basic version of the planning graph does not require you to compute the mutex relations. In fact, the answers to the questions below might change if you take mutex into account, so don’t.
- There is no need to create a propositional version of the domain and problem as the planning graph can be computed for the STRIPS version, too.
- You can either use a parser to read the domain and problem, or you can hard code it for this assignment.
- Action layers may contain actions that would normally be meaningless, namely those with inconsistent or complementary effects. For this assignment, you do not need to filter these out. If you do, it will change the answers to the questions below.
- If you have trouble, check the forum, but do not post the answers there. You may, however, post answers to similar questions to help others who may in turn help you.
Question 1

What is the index of the last proposition layer? - The index of the first proposition layer (containing the initial state) is 0, for $P_0$.

Marks available: 1
Question 2

How many state propositions (achievable atoms) does the planning graph contain in layer $P_2$?

Marks available: 3
Question 3

How many actions (excluding no-ops) does the planning graph contain in layer $A_4$?

*Marks available: 3*
Question 4

Now, extract the value of the planning graph heuristic for the initial state by adding the values for the individual goal components.

Marks available: 3