Due at the end of Week 7: Friday, October 28, 11:55 pm.

The whole group submits 4 files on Moodle: ProjectB.pdf, SampleData1.lp, SampleData2.lp and Solve.lp.

This deliverable is graded out of 20 and contributes 20% to the course grade.

Question 1

Indicated the title of your project.

Typically 5 to 10 words are appropriate. You can reuse the same title as in ProjectA.

[**0 marks**] There are no marks, this is just to help the course staff connect the dots.

Question 2 *Overview*

2.1 List the predicates and what they mean

Each one is a line (or two) that contains the name; then a precise description in English

[**3 marks**]

2.2 For each predicate listed in Question 2.1, indicate in a table the following information:

Arity How many arguments does the predicate take?

Function What is the function of the predicate: is it an input predicate, an internal predicate, or an output predicate?

Nature Is it a domain predicate or a search predicate?

Name	Arity	Function	Nature
Example1	2	Internal	Search
Example2	0	Output	Search
Example3	1	Input	Domain

[**2 marks**]

Question 3 *Constraints and Optimization*

3.1 List the constraints / optimization criteria that you have identified for the problem, even if you haven't implemented them. Describe each of them in English. If any of your constraints or criteria cannot be effectively captured with Answer-Set Programming, state so and justify why not briefly.

Each one is a line (or two) that contains the name; then a precise description in English

Example 1 A solution needs to be xyz.

Example 2 Prefer solutions that have fewer abc.

Example 3 A solution shouldn't have any uvw, where uvw is defined as a qrs that happens

to also be a defgh.

Example 4 A solution needs to be ijk. This cannot be effectively encoded in ASP because there is no known polynomial algorithm to test whether ijk holds in a candidate solution.

[**6 marks**]

[A] 1 mark: The description of the constraints and criteria makes sense: they really are constraints / criteria.

[B] 2 marks: The constraints / criteria provided are meaningful/desirable in terms of the specific problem being addressed good solutions will not be eliminated or deprioritized (symmetries notwithstanding)

[C] 2 marks: The list is comprehensive, there isn't anything obvious missing. Bad solution candidates will be effectively ruled out.

[D] 1 mark: For any listed constraint / criterion, if the answer states that in principle it cannot be implemented in ASP (with no more than a polynomial blow-up), this is the case indeed; and if the answer does not state it, then there is a natural way to implement it in ASP.

3.2 For each constraint or optimization criterion listed in Question 3.1, indicate in a table the following information:

Coded Has the constraint/criterion been implemented?

Lines If so, what are the relevant lines in `Solve.lp`? If not, write N.A.

Works To the best of your knowledge, is this constraints/criterion working as intended? If not implemented, write N.A.

MVP Is a correct implementation of this constraint/criterion required for a minimal viable version of your project?

Name	Type	Coded	Lines	Works	MVP
Example1	Constraint	✓	1–3	✓	✓
Example2	Criterion	✓	5–7	✗	✗
Example3	Constraint	✗	N.A.	N.A.	✗

[**2 marks**] The table is accurate.

Question 4

In practice / completion / implementation
does solve.lp work on the sampledata.lp?

4.1 [Self Evaluation] Self-evaluate from the following list

0 The syntax isn't even correct or the file is as good as empty or completely commented out

1a The syntax is correct and it runs but nothing really works, the output doesn't seem to connect to the input in any clear way, it doesn't do what we'd expect at all.

1b It always hangs or take forever (indicate in the justification if it's the grounding or the solving that hangs; how long you've tried waiting for (no need to go beyond 10min, but waiting more than 5sec might worthwhile); if you've identified the specific lines that make it hang, explain it in the justification)

2a Some aspects work with no bugs but some required feature is missing ///

2b Enough aspects to meet the MVP criteria are implemented and it works when you get lucky (sample data 1) and but there are still issues and sometimes it doesn't quite work (exemplified in sample data 2)

3 We've got an MVP and there no bugs left (or maybe super rare ones that we haven't found)

4 We've got an MVP and some fancy extensions

Write an element from the list [0, 1a, 1b, 2a, 2b, 3, 4].

[**4 marks**] The number indicates the number of marks to be received. (e.g., 2b is worth 2)

4.2 Explains or justifies your self evaluation.

Provide a 5–10 line paragraph.

[**3 marks**]

- 3 marks from marker for accurate self-evaluation
- off by one → 1 mark
- off by two or more → 0 marks

2b instead of 2a counts as off by one.
Examples:

- you didn't do anything and you admit it, you get 3/7: 0 from your self-evaluation and 3 from marker for accurate evaluation.
- you've got an MVP that seems to work to the best of your knowledge, unfortunately the marker easily finds a not-so-subtle bug or issue, you get 4/7: 3 from self-evaluation and 1 from marker for "off by one".