

Template of CSE 579 Project Milestone 2 -- Solutions to Basic Clingo Problems

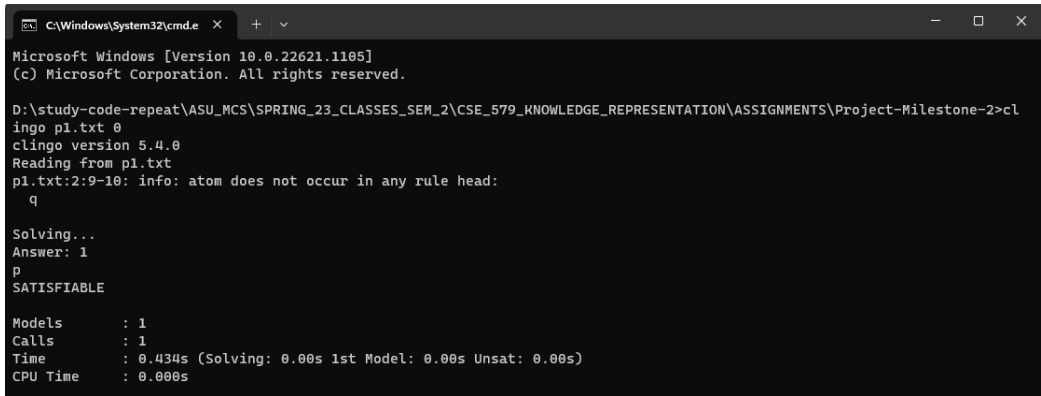
This template only records your clingo programs, command lines, and outputs of the 3 ASP programs given below. The Multi-Choice Single-Correct questions need to be answered directly in the graded assignment “Course Project: Milestone 2 -- Solutions to Basic Clingo Problems” in Coursera.

Problem 1

Consider the ASP program below from Unit 3 Module 2.[U3-M2 lecture slide].

```
p
r <- p ^ q
```

Find all the stable models of this program using clingo and fill in the following table. When writing down the command line, assume the clingo program is saved in file “p1.txt”.
(Note: Your command line may be different depending on your OS. You may truncate your output if it’s too long but make sure you don’t remove a part if it can support your answers to the Multi-Choice Single-Correct questions in the end)

Input Program	p. r :- p, q.
Command Line	clingo p1.txt 0
Output (truncated)	 <pre>C:\Windows\System32\cmd.e x + v Microsoft Windows [Version 10.0.22621.1105] (c) Microsoft Corporation. All rights reserved. D:\study-code-repeat\ASU_MCS\SPRING_23_CLASSES_SEM_2\CSE_579_KNOWLEDGE_REPRESENTATION\ASSIGNMENTS\Project-Milestone-2>cl ingo p1.txt 0 clingo version 5.4.0 Reading from p1.txt p1.txt:2:9-10: info: atom does not occur in any rule head: q Solving... Answer: 1 p SATISFIABLE Models : 1 Calls : 1 Time : 0.434s (Solving: 0.00s 1st Model: 0.00s Unsat: 0.00s) CPU Time : 0.000s</pre>

Problem 2

Consider the ASP program below from Unit 3 Module 6. [U3-M6 lecture slide].

$p \leftarrow \neg q$

$q \leftarrow \neg p$

Find all the stable models of this program using clingo and fill in the following table. When writing down the command line, assume the clingo program is saved in file “p2.txt”.

(Note: Your command line may be different depending on your OS. You may truncate your output if it's too long but make sure you don't remove a part if it can support your answers to the Multi-Choice Single-Correct questions in the end)

Input Program	<pre>p :- not q. q :- not p.</pre>
Command Line	<pre>clingo p2 clingo p1.txt 0.txt 0</pre>
Output (truncated)	 <pre>D:\study-code-repeat\ASU_MCS\SPRING_23_CLASSES_SEM_2\CSE_579_KNOWLEDGE_REPRESENTATION\ASSIGNMENTS\Project-Milestone-2>cl ingo p2.txt 0 clingo version 5.4.0 Reading from p2.txt Solving... Answer: 1 q Answer: 2 p SATISFIABLE Models : 2 Calls : 1 Time : 0.125s (Solving: 0.02s 1st Model: 0.02s Unsat: 0.00s) CPU Time : 0.000s</pre>

Problem 3

Consider the ASP program below consisting of rules from Unit 3 Module 7. .[U3-M7 lecture slide].

```
p <- ¬p  
p v q
```

Find all the stable models of this program using clingo and fill in the following table. When writing down the command line, assume the clingo program is saved in file “p3.txt”.
(Note: Your command line may be different depending on your OS. You may truncate your output if it’s too long but make sure you don’t remove a part if it can support your answers to the Multi-Choice Single-Correct questions in the end)

Hint: rule “p v q” can be seen as “p v q <- T”.

Input Program	p :- not p. p, q :- #true.
Command Line	clingo p3.txt 0
Output (truncated)	