

# Knowledge Representation & Reasoning

(Group C)

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# GENERAL

- ▶ Grades HW2 have been posted
- ▶ Exam: March 28, 14:00

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  - ▶ On pen & paper
  - ▶ Can bring cheat sheet, just not digital
    - ▶ Tip: bring examples of ASP problems and solutions

## THIS WEEK: EXERCISES DISJUNCTION IN HEAD & SATURATION

- ▶ Disjunction in the head, unlike choice rules, cares about minimality:
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  - ▶  $\{a;b\}. \rightarrow \{\{\}, \{a\}, \{b\}, \{a, b\}\}$

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- ▶ Saturation
  - ▶ Technique to ensure there are no counterexamples
    - ▶ When you saturate, *all* relevant atoms become true
    - ▶ A counterexample would be a strict subset of all relevant atoms
    - ▶ Requiring `saturate` means the set of all relevant atoms is the smallest model

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    - ▶ Requiring saturate means the set of all relevant atoms is the smallest model
  - ▶ Can also be used to generate partial “normal” answer sets starting from which there are no counterexamples (exercise 4,5)



# UNIQUE SOLUTIONS

- ▶ Use regular choice rules to generate partial solution
- ▶ Use disjunction in the head to generate all complete solutions that start from the partial solution
- ▶ Use saturation to state
  - ▶ This partial solution is unsatisfiable (ex4)
  - ▶ Or, there exists only one complete solution from this partial solution (ex5)