1. Motivation

Angry Birds (http://www.angrybirds.com) is a strategic arcade video game where the player uses a slingshot to shoot a limited number of birds at constructions aiming to destroy all pigs in the field.

Goal: Construct a declarative agent which plays the game
Challenge: Plan optimal shots under consideration of physics
Our means: HEX-programs, i.e., Answer Set Programming (ASP) with external sources and other extensions

2. HEX-Programs

HEX-programs extend ASP by external sources.
Rule bodies may contain external atoms, e.g.,

\[
\text{distance}(O_1, O_2)(D) \text{ is true iff distance between } O_1 \text{ and } O_2 \text{ is } D
\]

\[
\text{canpush}[\text{ngobject}](O_1, O_2) \text{ is true iff } O_1 \text{ can push } O_2 \text{ given additional info in extension of } \text{ngobject}
\]

Example

Estimate likelihood that object \( O_2 \) falls when object \( O_1 \) is hit
\[ r1: \text{pushDamage}(O_2, P_1, P) \leftarrow \text{pushDamage}(O_1, \ldots, P_1), P_1 > 0 \]
& \text{canpush}[\text{ngobject}](O_1, O_2), \text{pushability}(O_2, P_2), P = P_1 \times P_2/100.\]