ISLA: An Algorithmic Approach to Assisted Narrative Planning and Assembly

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abstract

Intelligent Story Layout Assistant (ISLA) is a forward-chaining narrative planner based on Stephen Ware's GLAIVE. It constructs story layouts that achieve the author's goals while making sure that most steps in the plan have clear motivations.

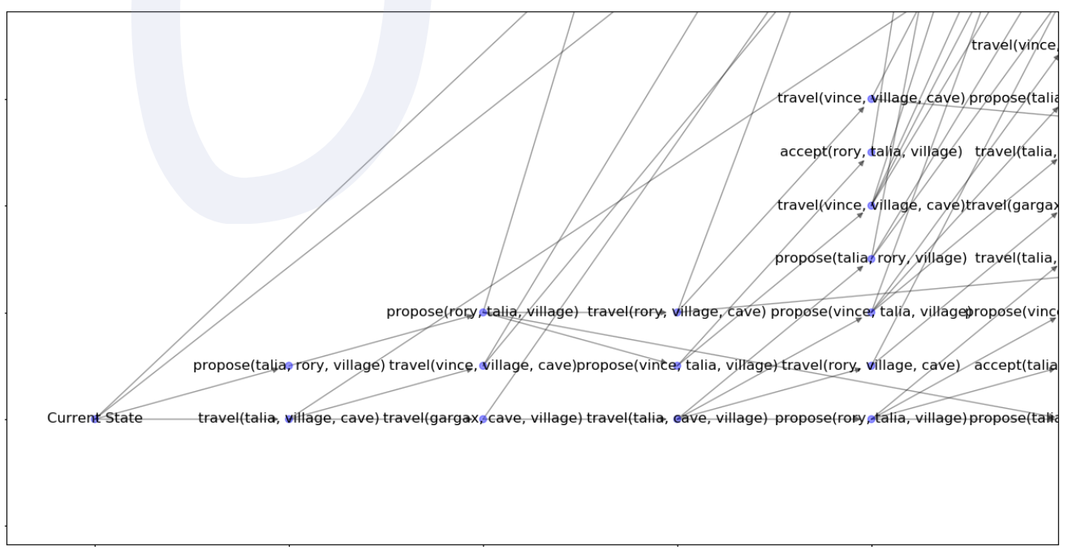
These layouts, or solution plans, are based on a handcrafted knowledge-base of story universe elements. The current output is capable of displaying the underlying motivations of each action, and state transition information.

As a whole, ISLA has the underlying data structures needed to potentially further assist the author in fleshing out the produced story layout.

how

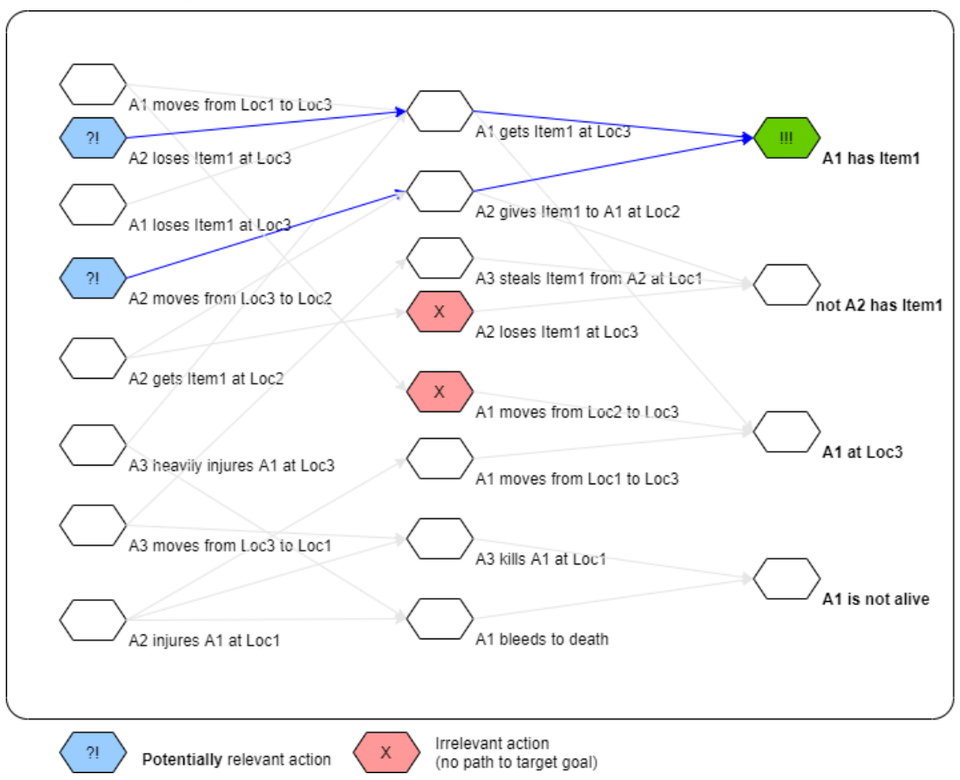
plan graph

ISLA's main data structure is the Plan Graph - a tree-like directed graph with ***states*** as nodes, and ***actions*** as edges. The graph can be seen as a search space where ISLA is looking for solution nodes - states that fulfill a story chapter's goals. How this graph is grown is assisted by another structure: the ***goal graph***.



goal graph

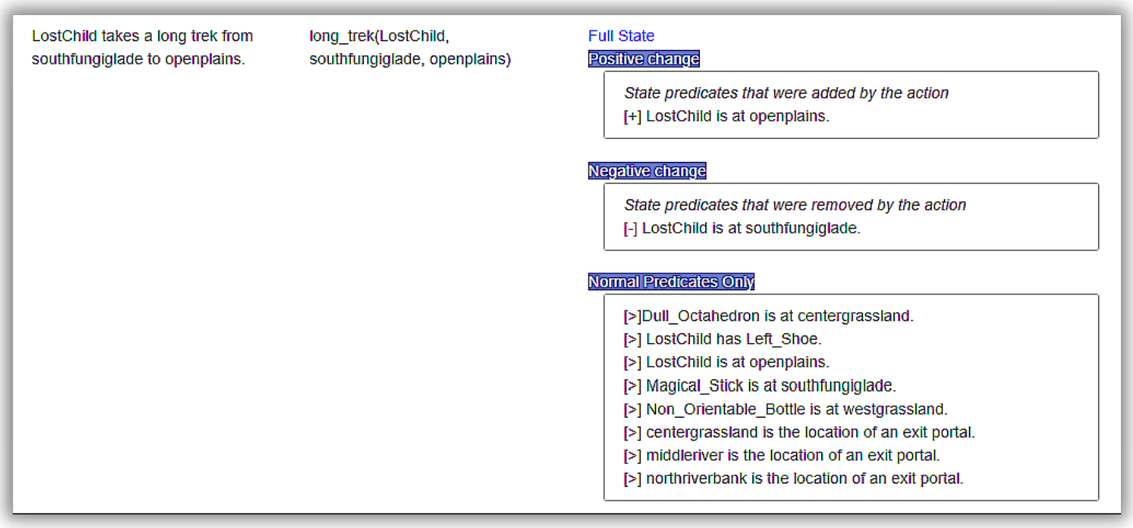
As the main heuristic that ISLA utilizes involves estimating how close to actor goals any particular state node is. This is achieved by using the goal graph, which embodies the 'backward reasoning' paradigm. In order to create a goal graph, we start at the goal nodes (on the right, layer G). These goal nodes represent all the possible actor-goal pairs that can exist. The goal graph is then grown backwards by creating a new layer of nodes (layer G-1), with actions as edge that *may* lead to the previous nodes. Any path from layer (G-n) -> (G) represents a *potential* course of action in order to achieve a specific actor goal.



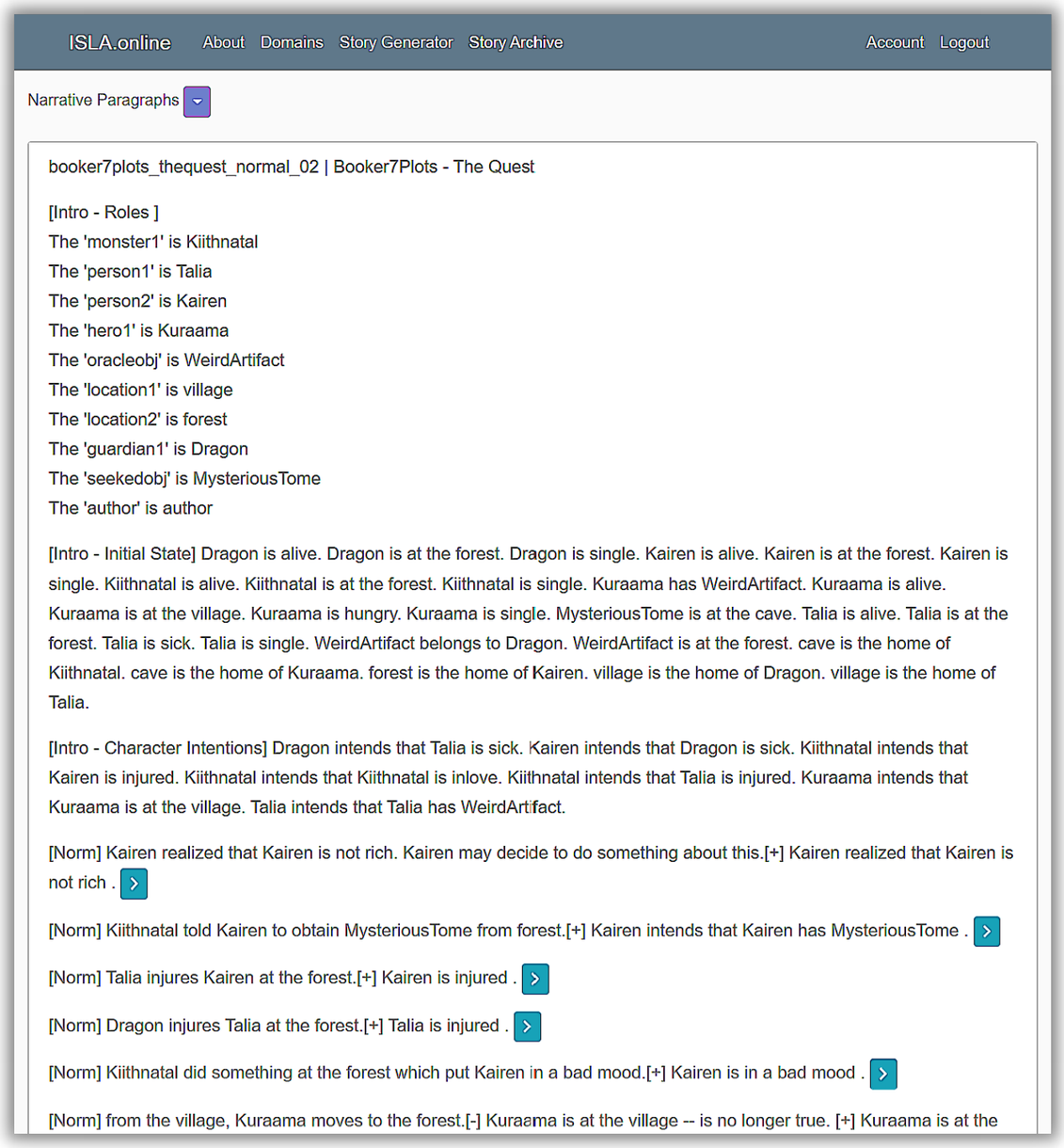
output

Here are some sample output screen-captures from ISLA.

This show a specific action (part of a sequence of actions) with supporting state-transition information on the right



Here's an attempt to create output that is closer to natural language



Scan this QR code to access the live demo for ISLA

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