

# Wide Ruled: An Author Goal-Based Interactive Story Generator

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[http://eis.ucsc.edu/Wide\\_Ruled](http://eis.ucsc.edu/Wide_Ruled)

# Wide Ruled



## Characters

John Smith  
Jerry Fontana  
Cindy Rollins  
Gene Franks  
Rachel Delores  
Dick Tracy  
Sherlock Holmes

New Edit ... Delete



## Environments

The Docks  
The Alleyway  
The City Park  
The Shady Bar  
The Abandoned Shack

New Edit ... Delete



## Plot Point Types

Crime Info  
Murderer  
Murder Solved

New Edit ... Delete



## Goals and Plot Fragments

- ▲ Do Murder Mystery
  - ▷ Do Story
    - No more alive victims
- ▲ Do the Crime (Text Victim)
  - ▷ Random Murderer
  - ▷ Murderer is Enemy
- ▲ Attack the Victim (Text Victim)
  - Gunshot
  - Stabbing
- ▲ Find a Detective (Text Detective)
  - Detective sleeping
  - Detective drunk
- ▲ Investigate
  - ▷ Find crime scene evidence
  - ▷ Interview friend
  - ▷ Interview coworker
  - ▷ Find clue at murderer
  - Put together clues and
- ▲ Solve the Crime
  - Solve with celebration
  - Solve with smugness
- ▲ Capture the Murderer

New ... Edit ... Delete

# Wide Ruled

- Text-based interactive story generator with GUI
- Modified *UNIVERSE*-style story model (Michael Lebowitz)
  - Hierarchical, author goal based story structure
  - Originally designed for soap opera style serial storylines (never ending!)

**Murderer**

Name	Type
Murderer Name	Text
Murder Hideout Name	Text
Clues Found	Number

Buttons: Add New, Delete Selected, OK, Cancel

**John Smith**

### Traits

Name	Value
Name	John Smith
Potential Victim	<input checked="" type="checkbox"/>
Age	34
Hometown	Brooklyn, New York
Gender	Male
Detective	<input type="checkbox"/>
Alive	<input checked="" type="checkbox"/>

### Relationships

Name	Target	Strength
Friend	Gene Franks	10
Enemy	Jerry Fontana	3
Coworker	Cindy Rollins	10

Buttons: Edit Shared Traits ..., Edit Shared Relationships ...

# UNIVERSE Overview

- Universe an **author modeling** story system
- Author plans and plot fragments that can coordinate one, many, or no characters
  - Author goals and plans may make no sense from character viewpoint
- Associated with each plot fragment
  - Author goal it can achieve
  - Characters
  - Constraints
  - Ordered list of subgoals (steps)

# Example character in Universe

Name: Liz Chandler

Marriages:

Don Craig [1980]

Tony Dimeria

Stereotypes: Actor, Knockout, Socialite, Party-goer

Trait modifiers: (Sex F) (Age young-adult) (Wealth 3) (Promiscuity -3)  
(Intelligence 3)

Description:

Wealth 8                      Promiscuity 3                      Competence NIL

Niceness 0                      Self-Conf 6                      Guile 7

Naiveté 7                      Moodiness 6                      Phys-Att 7

Intelligence 7                      Age young-adult                      Sex F

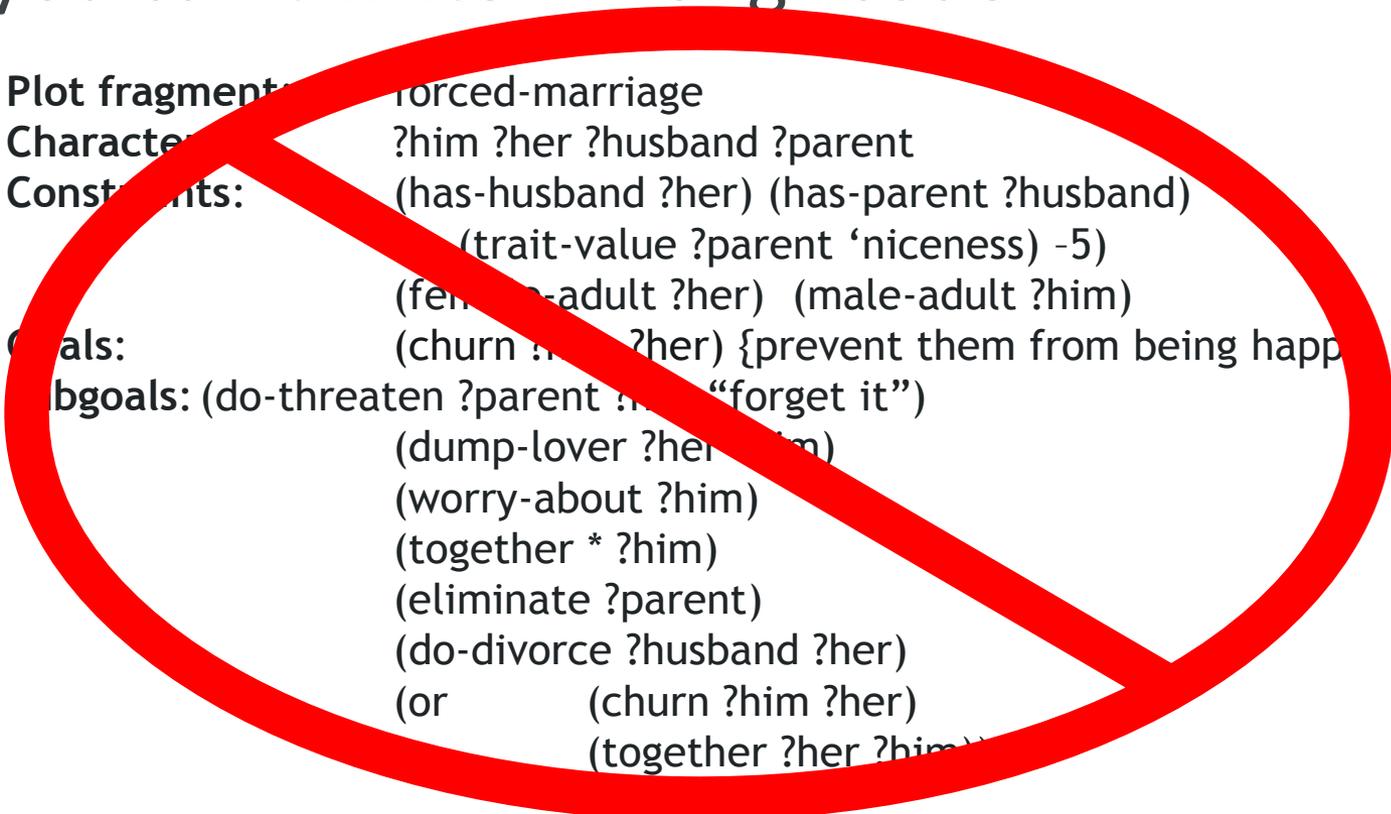
Goals: (Find-Happiness Become-Famous Meet-Famous-People)

# Example plot fragment

**Plot fragment:** forced-marriage  
**Characters:** ?him ?her ?husband ?parent  
**Constraints:** (has-husband ?her) (has-parent ?husband)  
( < (trait-value ?parent 'niceness) -5)  
(female-adult ?her) (male-adult ?him)  
**Goals:** (churn ?him ?her) {prevent them from being happy}  
**Subgoals:** (do-threaten ?parent ?her "forget it")  
(dump-lover ?her ?him)  
(worry-about ?him)  
(together \* ?him)  
(eliminate ?parent)  
(do-divorce ?husband ?her)  
(or (churn ?him ?her)  
(together ?her ?him))

# No more lisp

- Wide Ruled is a “structured editor” - you have access to a UNIVERSE-like story model, but you can't write “wrong” code



```
Plot fragment: forced-marriage
Character: ?him ?her ?husband ?parent
Constraints: (has-husband ?her) (has-parent ?husband)
              (trait-value ?parent 'niceness) -5)
              (female-adult ?her) (male-adult ?him)
Goals: (churn ?husband ?her) {prevent them from being happy}
Subgoals: (do-threaten ?parent ?husband "forget it")
            (dump-lover ?her ?husband)
            (worry-about ?him)
            (together * ?him)
            (eliminate ?parent)
            (do-divorce ?husband ?her)
            (or (churn ?him ?her)
                (together ?her ?him))
```

# Story Components

Wide Ruled stories are made of:

- **Objects** (“What” of the story)
  - **Characters, Environments** – attributes and relationships
  - **Plot Points** – major episodic story information
- **Structure** that acts on these objects (“How” of the story)
  - **Author Goals** – What to do in the story
  - **Plot Fragments** – Ways of achieving the goals

# What

The image shows a software interface with four main panels, each with a list of items and control buttons at the bottom. The 'Plot Point Types' panel is highlighted with a dashed blue border.

- Characters** (Icon: three people): John Smith, Jerry Fontana, Cindy Rollins, Gene Franks, Rachel Delores, Dick Tracy, Sherlock Holmes. Buttons: New, Edit ..., Delete.
- Environments** (Icon: house): The Docks, The Alleyway, The City Park, The Shady Bar, The Abandoned Shack. Buttons: New, Edit ..., Delete.
- Plot Point Types** (Icon: lightbulb): Crime Info, Murderer, Murder Solved. Buttons: New, Edit ..., Delete.
- Goals and Plot Fragments** (Icon: document):
  - Do Murder Mystery
    - Do Story
      - No more alive victims
  - Do the Crime (Text Victim)
    - Random Murderer
    - Murderer is Enemy
  - Attack the Victim (Text v)
    - Gunshot
    - Stabbing
  - Find a Detective (Text D E)
    - Detective sleeping
    - Detective drunk
  - Investigate
    - Find crime scene evid
    - Interview friend
    - Interview coworker
    - Find clue at murderer
    - Put together clues and
  - Solve the Crime
    - Solve with celebration
    - Solve with smugness
  - Capture the MurdererButtons: New ..., Edit ..., Delete.

# How

The image shows a software interface for creating a story, divided into four main panels. Each panel has a list of items and three buttons at the bottom: 'New', 'Edit ...', and 'Delete'.

- Characters:** John Smith, Jerry Fontana, Cindy Rollins, Gene Franks, Rachel Delores, Dick Tracy, Sherlock Holmes.
- Environments:** The Docks, The Alleyway, The City Park, The Shady Bar, The Abandoned Shack.
- Plot Point Types:** Crime Info, Murderer, Murder Solved.
- Goals and Plot Fragments:**
  - ▲ Do Murder Mystery
    - ▷ Do Story
      - No more alive victims
  - ▲ Do the Crime (Text Victim)
    - ▷ Random Murderer
    - ▷ Murderer is Enemy
  - ▲ Attack the Victim (Text Victim)
    - Gunshot
    - Stabbing
  - ▲ Find a Detective (Text Detective)
    - Detective sleeping
    - Detective drunk
  - ▲ Investigate
    - ▷ Find crime scene evidence
    - ▷ Interview friend
    - ▷ Interview coworker
    - ▷ Find clue at murderer
    - Put together clues and
  - ▲ Solve the Crime
    - Solve with celebration
    - Solve with smugness
  - ▲ Capture the Murderer

# Characters and Environments

- Object with two lists:
  - Traits (number, text, true/false)
  - Relationships (with strengths)
  
- Relationships connect objects of same type:
  - Character-to-character
  - Environment-to-environment



The screenshot displays a character profile for John Smith. At the top, there is a circular icon with three stylized figures and the name "John Smith". Below this, there are two main sections: "Traits" and "Relationships".

**Traits**

Name	Value
Name	John Smith
Potential Victim	<input checked="" type="checkbox"/>
Age	34
Hometown	Brooklyn, New York
Gender	Male
Detective	<input type="checkbox"/>
Alive	<input checked="" type="checkbox"/>

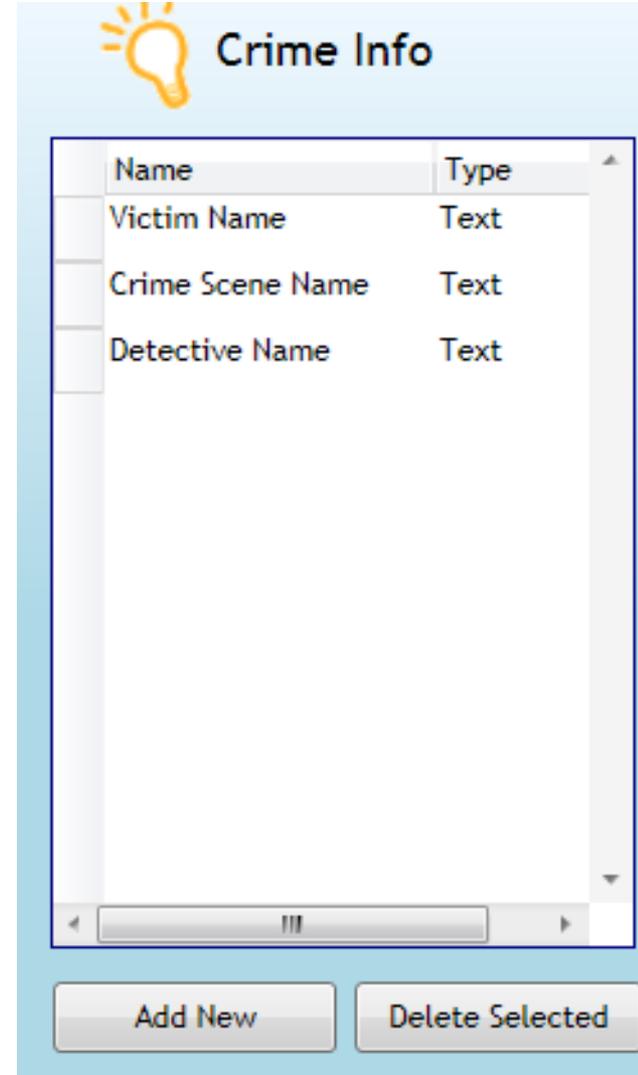
**Relationships**

Name	Target	Strength
Friend	Gene Franks	10
Enemy	Jerry Fontana	3
Coworker	Cindy Rollins	10

At the bottom of each section, there is a button: "Edit Shared Traits ..." and "Edit Shared Relationships ...".

# Plot Points

- Plot Points are objects containing important story information:
  - Murder mystery: the murderer, the victim, the detective
- Plot Points are **temporary**, and can only be created, edited, or deleted **during story generation**
- You specify what they can contain before story generation
- ...but you fill them with information within **Plot Fragments**



The screenshot shows a user interface titled "Crime Info" with a lightbulb icon. It features a table with two columns: "Name" and "Type". The table contains three rows of data. Below the table is a horizontal scrollbar. At the bottom of the interface are two buttons: "Add New" and "Delete Selected".

Name	Type
Victim Name	Text
Crime Scene Name	Text
Detective Name	Text

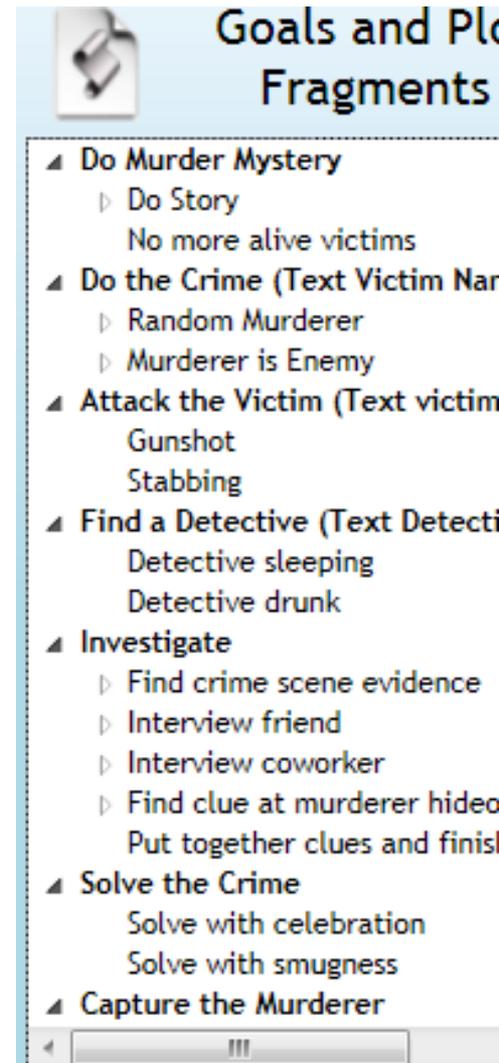
# Wide Ruled

## ■ Author Goals

- Reflect story structure, high level intent of author
- Can involve multiple characters, environments (or none)
- **Murder mystery example:**  
    **“Murder Victim”, “Investigate”, “Capture criminal”**

## ■ Plot Fragments

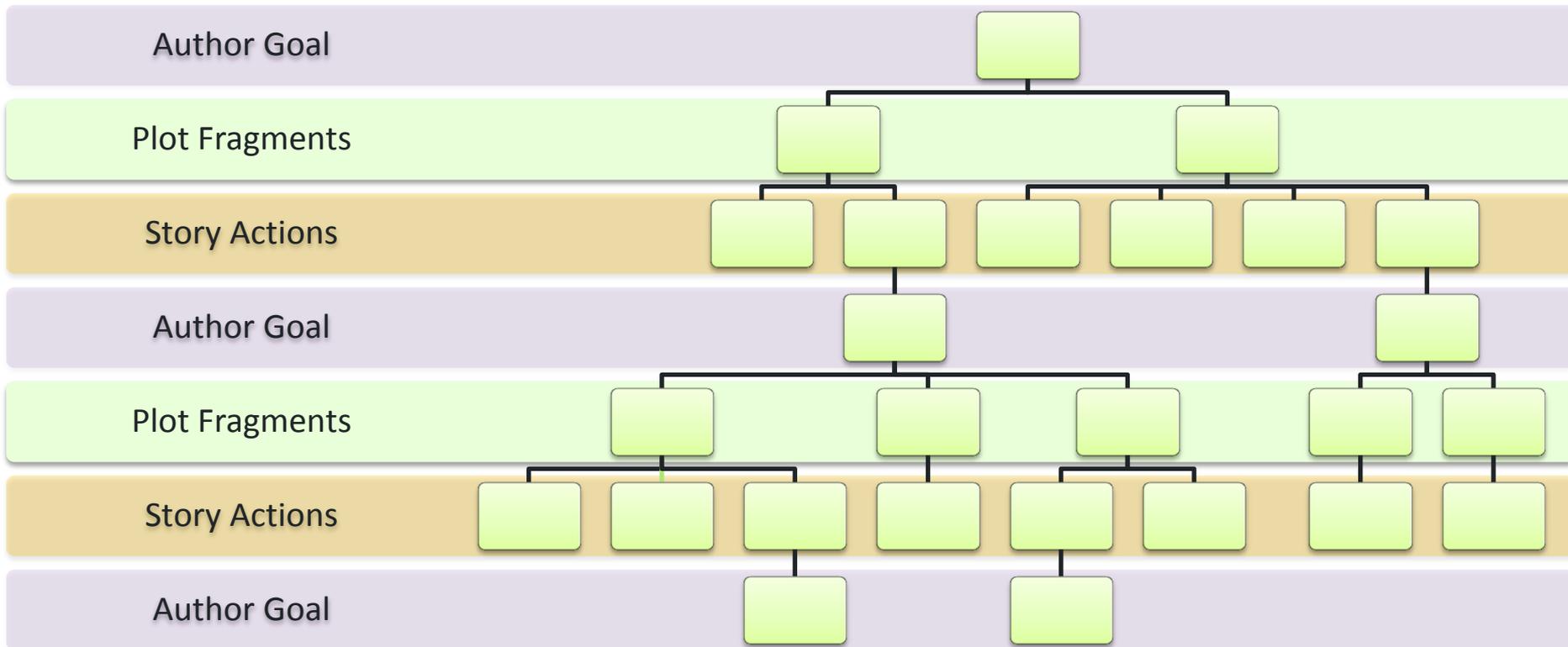
- Different ways to achieve a **single** Author Goal
  - A precondition
  - List of story actions to be completed in order
  - Can activate another author goal within it (**subgoal**)
- **Example fragments for “Investigate”:**  
    **“Interview family”, “Run DNA tests”, “Gather suspects”**



**Goals and Plot Fragments**

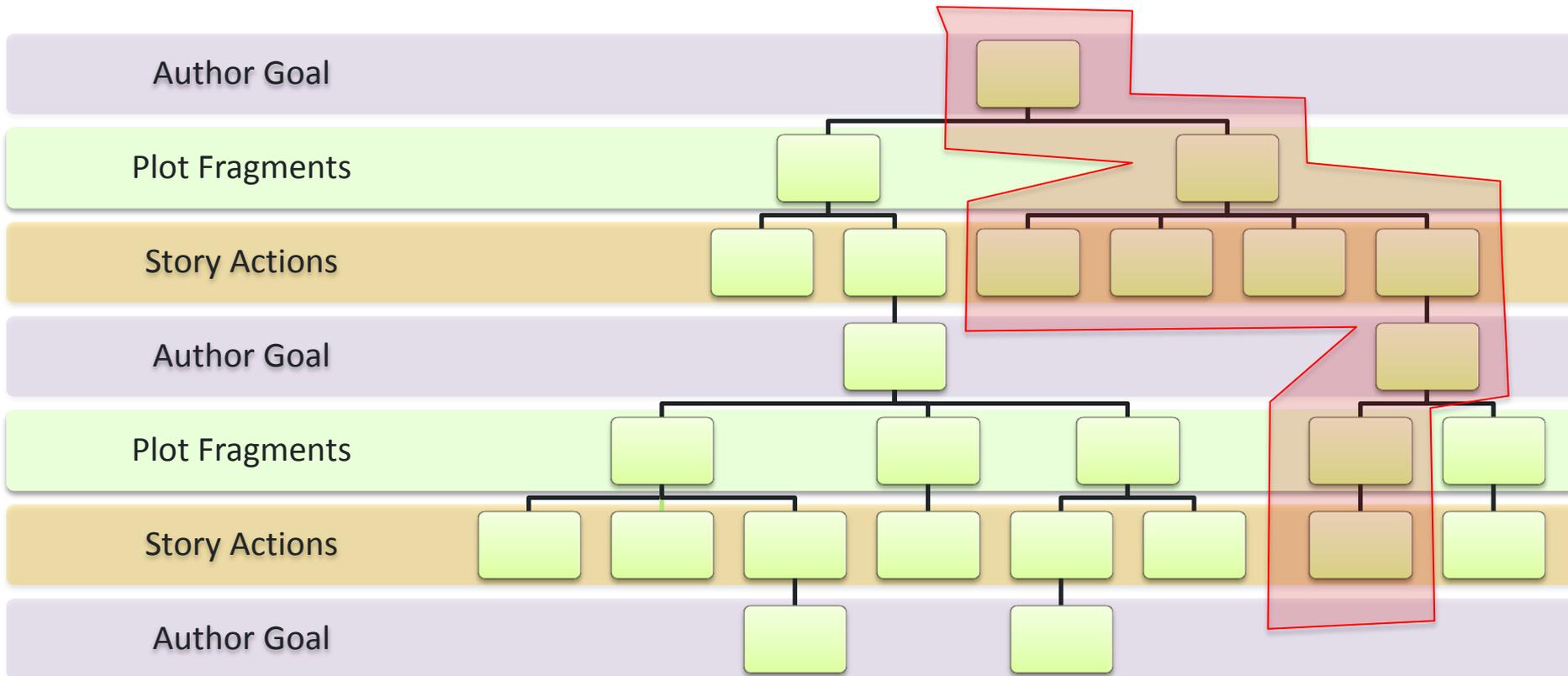
- ▲ Do Murder Mystery
  - ▷ Do Story
    - No more alive victims
- ▲ Do the Crime (Text Victim Name)
  - ▷ Random Murderer
  - ▷ Murderer is Enemy
- ▲ Attack the Victim (Text victim name)
  - Gunshot
  - Stabbing
- ▲ Find a Detective (Text Detective Name)
  - Detective sleeping
  - Detective drunk
- ▲ Investigate
  - ▷ Find crime scene evidence
  - ▷ Interview friend
  - ▷ Interview coworker
  - ▷ Find clue at murderer hideout
  - Put together clues and finish
- ▲ Solve the Crime
  - Solve with celebration
  - Solve with smugness
- ▲ Capture the Murderer

# Wide Ruled

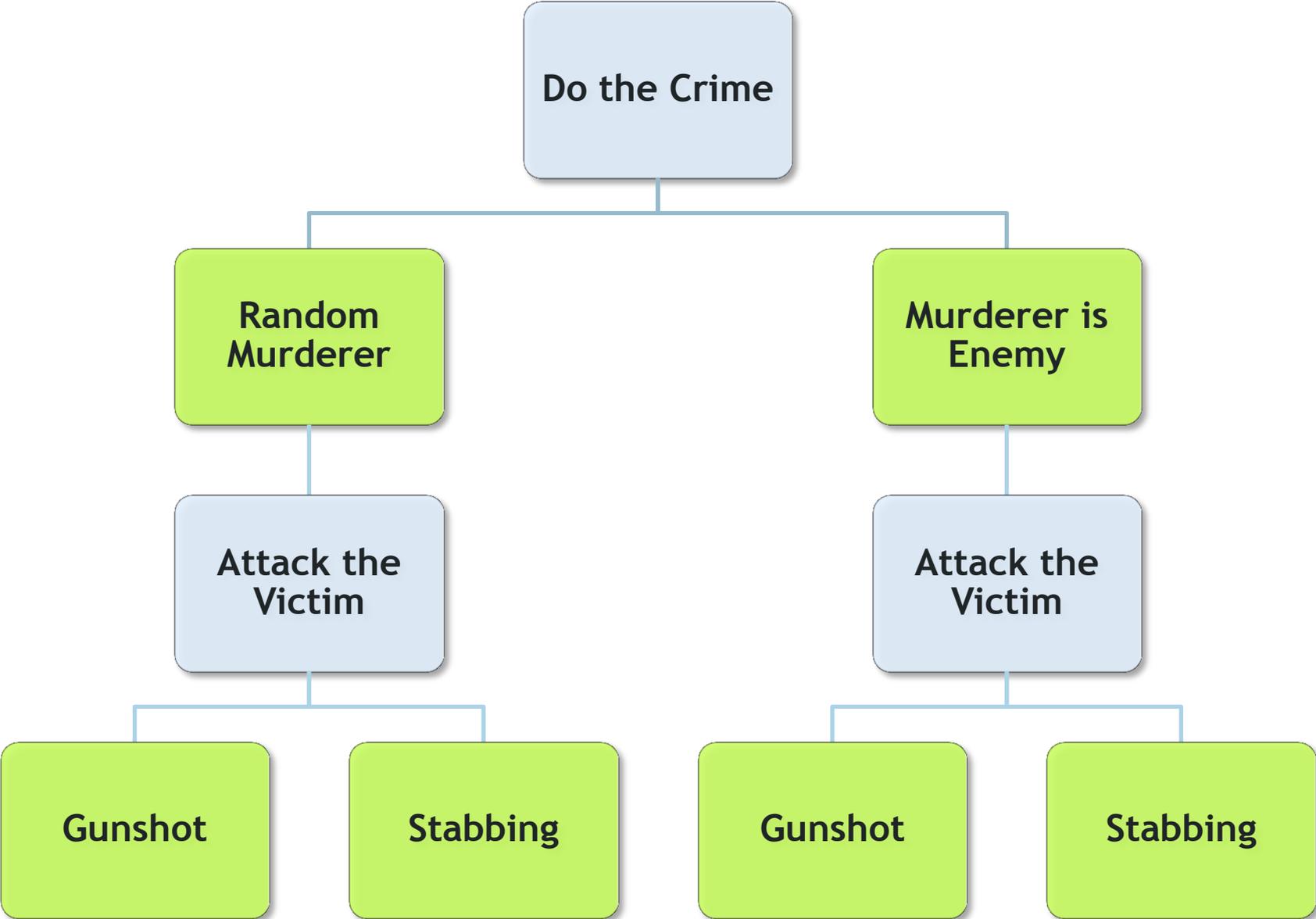




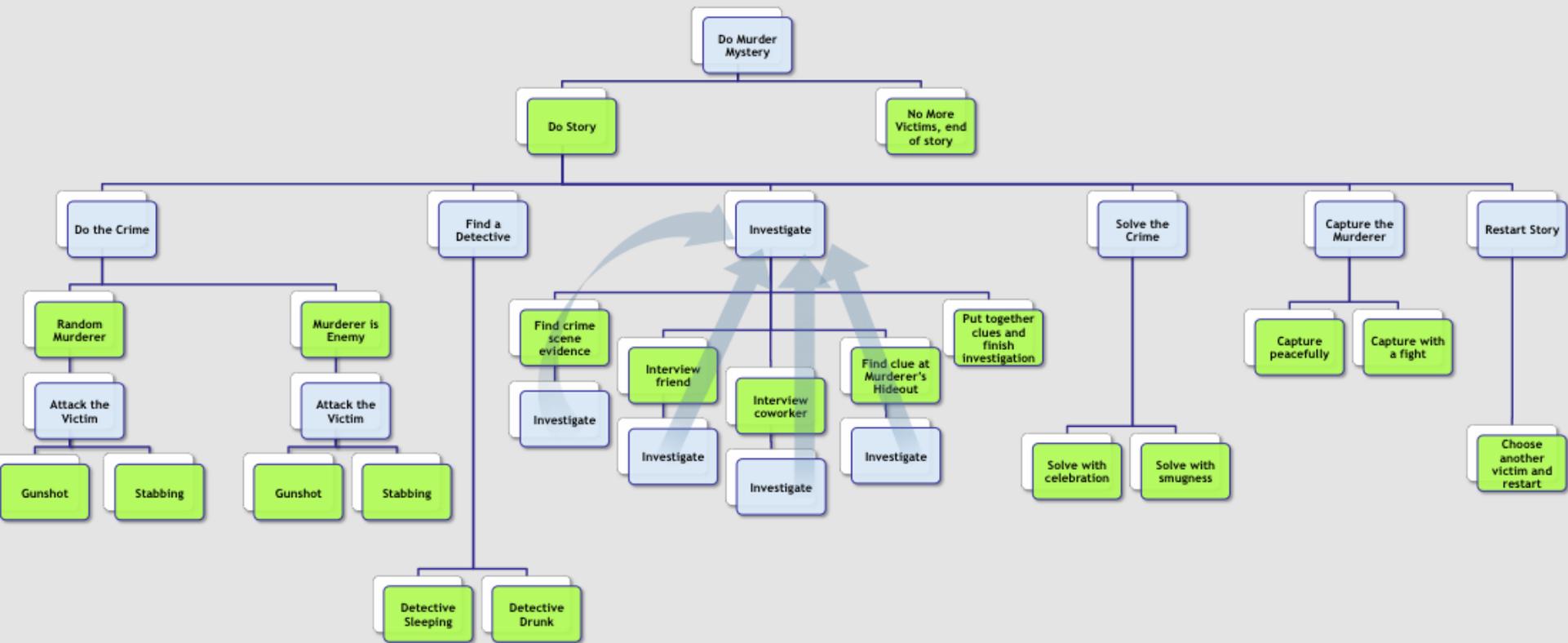
# Wide Ruled



# Murder Mystery Story Sample Goal



# Murder Mystery Goal/Fragment Hierarchy



# How do we make a single story?

- 1. Start with initial Author Goal, selected by author
- 2. Generator looks at every Plot Fragment for that Author goal
- 3. Generator checks preconditions for Plot Fragments
- 4. Generator picks **one** Plot Fragment with satisfied preconditions, and then executes every story action **in order**
  - If a story action is a **subgoal action** go to step 2
  
- A plot fragment can only be selected if it's entire precondition is satisfied

# Author Goals and Plot Fragments - Review

## ■ Author Goals

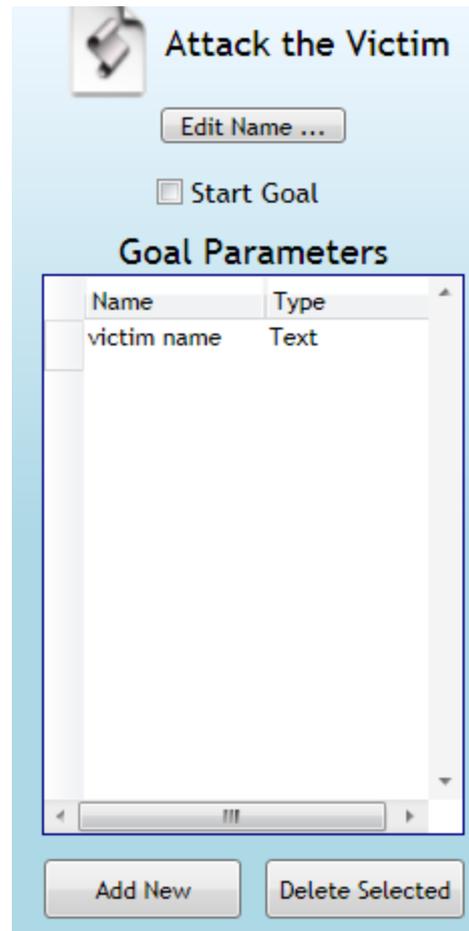
- Reflect story structure, high level intent of author

## ■ Plot Fragments

- Are different ways to achieve a single Author Goal
- Contain:
  - Precondition
  - Ordered list of story actions
    - print text, calculate, edit character/environment/plot point, create/delete plot point, and **subgoal**

# Author Goal Editor

- Author goals can have parameters that pass information to plot fragments



# Plot Fragments

- The Plot Fragment editor

The screenshot shows the Plot Fragment editor interface for a plot fragment titled "Random Murderer". The interface is divided into three main sections: Author Goal, Precondition, and Story Actions.

**Author Goal:** The goal is "Do the Crime". Below the goal, there is a "Parameters" table:

Name	Type
Victim Name	Text

Below the parameters table is a "Change Goal ..." button.

**Precondition:** The precondition text is: "There exists a Character, where Trait 'Name' != Victim Name and Trait 'Description' is saved as variable 'crimeScene' and Trait 'Nearby Location' target name is saved as variable 'hidingPlace'". Below the text is a "New ..." button, an "Edit ..." button, a "Copy" button, and a "Delete" button.

**Story Actions:** The story actions are: "Display Text: 'The time: <crimeTime>, the place: <crimeScene>' Pursue Subgoal 'Attack the Victim (Victim Name)'" and "Display Text: '<murderName> appears out of the dark inevitable eyes of the police.'" followed by "Create new Crime Info Plot Point, saved as variable 'crimeInformation'", "Edit saved Crime Info Plot Point 'crimeInformation': saved", "Create new Murderer Plot Point, saved as variable 'murderer'", "Edit saved Murderer Plot Point 'murdererInformation': saved", and "Edit saved Murderer Plot Point 'murdererInformation': saved". Below the text is a "New ..." button, an "Edit ..." button, a "Copy" button, and a "Delete" button.

At the bottom center of the interface is an "OK" button.

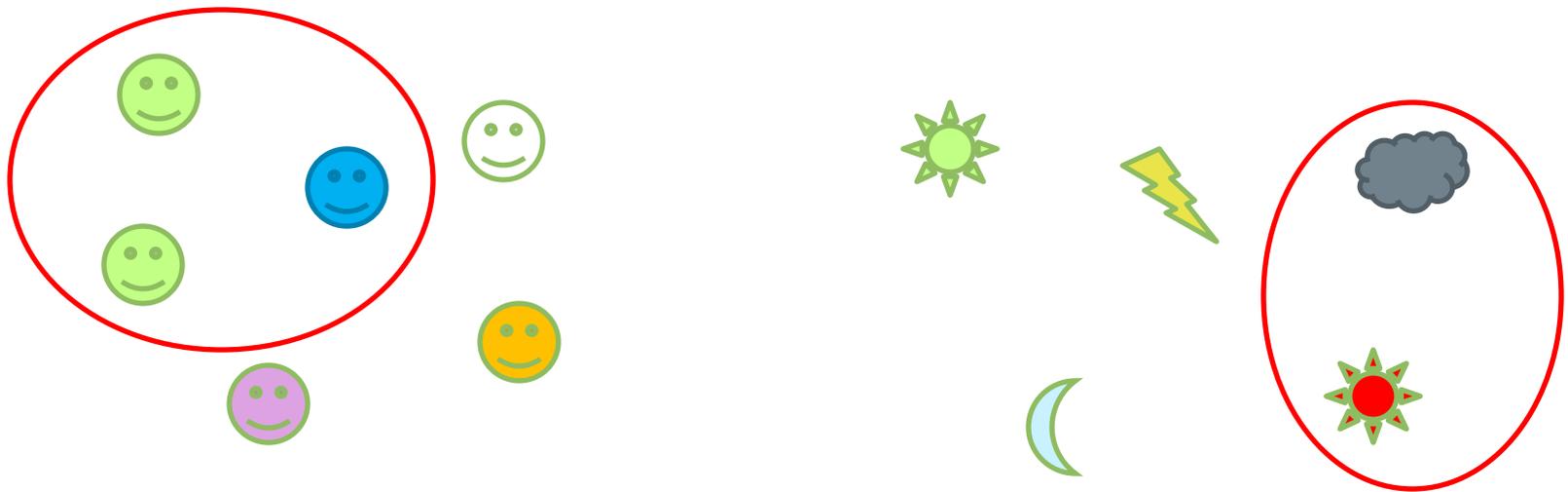
# Preconditions

- A Plot Fragment is chosen if its **Precondition** is satisfied
- Each constraint statements matches against
  - Characters
  - Environments
  - Plot Points
- Precondition is a list of constraint statements that must **ALL** be true (each statement has at least one char./environ./plot point that is compatible with the constraints)

There exists a Character, where Trait "Name" == Victim Name, and Relationship "Enemy" target name is saved as variable "enemyName" and Relationship "Enemy" strength > 5

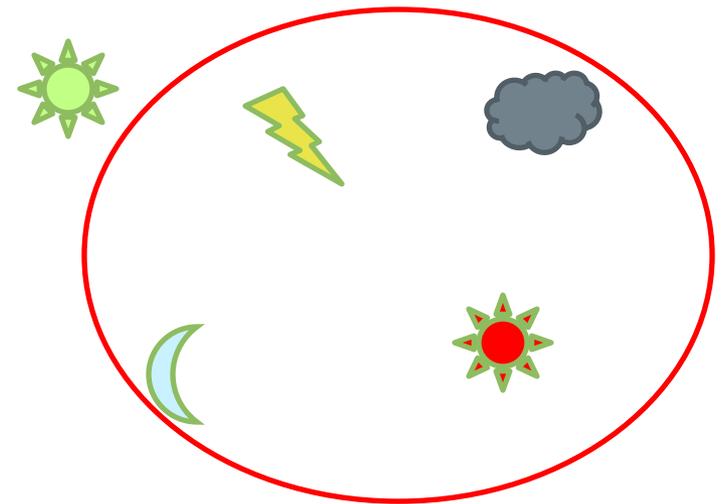
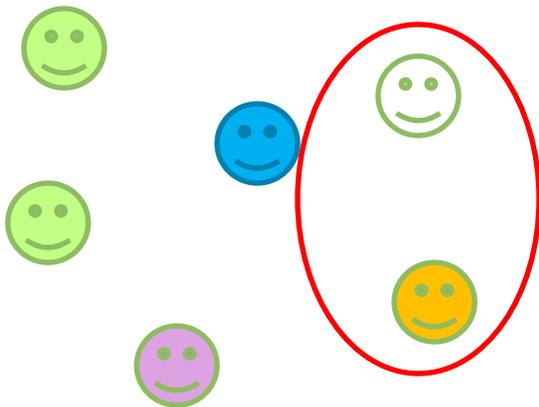
# Preconditions and Story Actions

- *Preconditions capture* a subset of characters, environments, and plot points with specific attributes and relationships (character with a certain age, or environment with a certain weather, etc)



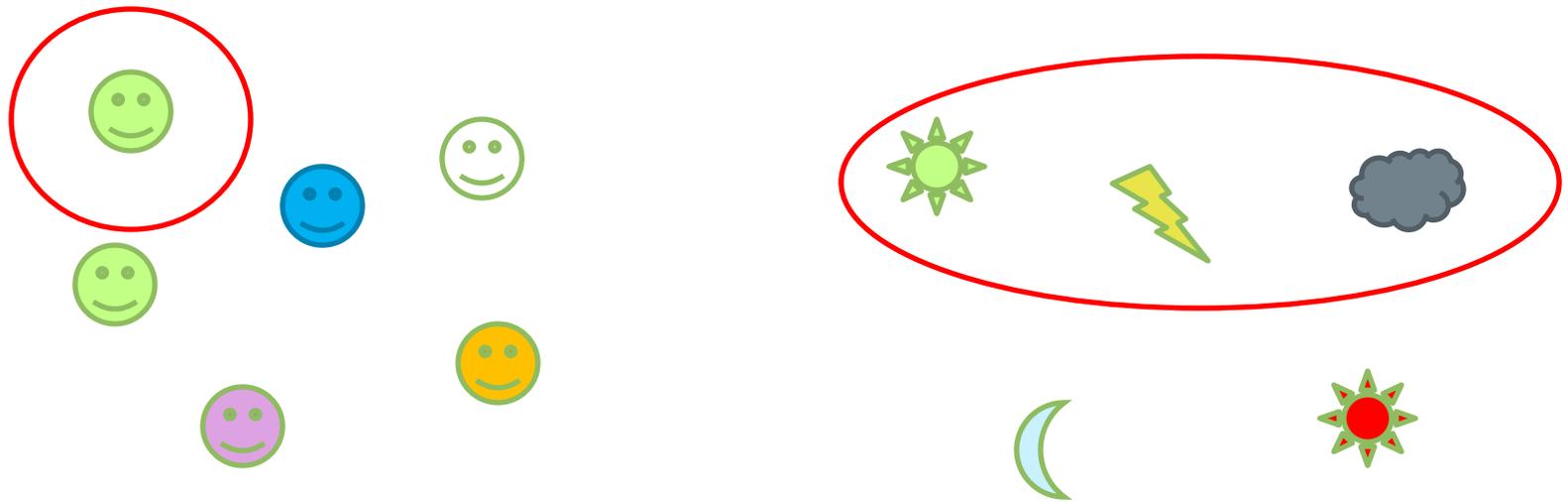
# Preconditions and Story Actions

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# Precondition Editing

There exists a Character, where Trait "Name" == Victim Name, and Relationship "Enemy" target name is saved as variable "enemyName" and Relationship "Enemy" strength > 5

**Edit Character Precondition Statement**

This Character must exist

Save Character ...

Constraints

Trait "Name" == Victim Name  
Relationship "Enemy" target name is saved as variable "enemyName"  
Relationship "Enemy" strength > 5

New Delete

Constraint Details:

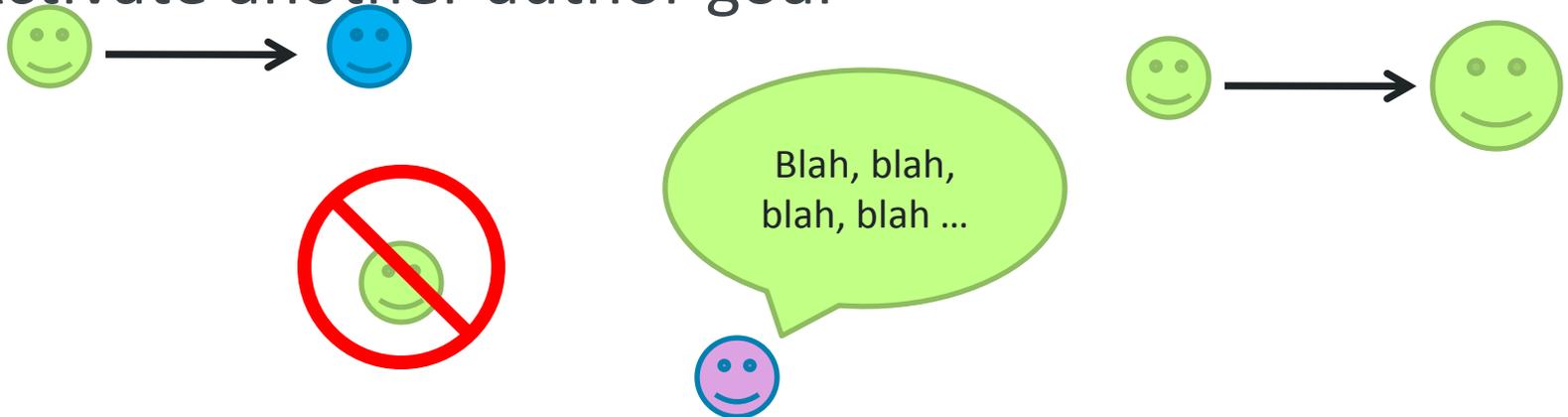
Type of attribute to match

Use Saved Variable

Must always be true

# Preconditions and Story Actions

- *Story actions* **do** things with those things, for example:
  - Create a plot point and put things into it
  - Change the age/name/relationships of a character
  - Calculate a new number variable:  $\text{varY} = \text{varX} + 1$
  - Print out text (how the story is made!)
  - Activate another author goal



# Story Actions

## ■ Ordered list

Display Text: "The time: <crimeTime>, the place: <crimeSceneDescription>."

Pursue Subgoal "Attack the Victim (Victim Name)"

Display Text: "<enemyName> appears out of the darkness as the evil murderer, and escapes into the distance inevitable eyes of the police."

Create new Crime Info Plot Point, saved as variable "crimeInformation"

Edit saved Crime Info Plot Point "crimeInformation": set trait "Victim Name" to saved variable "Victim Name"

Edit saved Crime Info Plot Point "crimeInformation": set trait "Crime Scene Name" to saved variable "crimeSc

Create new Murderer Plot Point, saved as variable "murderInfo"

Edit saved Murderer Plot Point "murderInfo": set trait "Murderer Name" to saved variable "enemyName"

Edit saved Murderer Plot Point "murderInfo": set trait "Murder Hideout Name" to saved variable "hideoutName"

Display Text: "<detectiveName> decides to interview <friendName>, a friend of <victimName> murdered. He finds that <victimName> and <murdererName> had a recent argument over mo

Calculate:  $\text{newClueCount} = \text{currentClueCount} + 1$

Edit saved Murderer Plot Point "murderInfo": set trait "Clues Found" to saved variable "newClu

Pursue Subgoal "Investigate"

# Story Actions

- Display Text
- Pursue Subgoal (any Author Goal)
- Calculate new value
- Create Character/Environment/Plot point
- Edit Character/Environment/Plot point
- Delete Character/Environment/Plot point

# Variable Binding

- Variables are pieces of saved and named data that can be used in various places in a plot fragment.
- They come from goal parameters, the precondition, and some actions (calculation, create new plot point)

The screenshot shows the 'Gunshot' plot editor interface. It is divided into three main sections: 'Author Goal', 'Precondition', and 'Story Actions'.  
1. **Author Goal:** Titled 'Attack the Victim', it contains a 'Parameters' table with one entry: 'victim name' of type 'Text'. This entry is circled in red.  
2. **Precondition:** Contains the text 'There exists a Character, saved as "victim", where Tra...'.  
3. **Story Actions:** Contains two actions: 'Display Text: "<victim name> turns around suddenly a bang erupts and our victim falls flat to the ground, cc' and 'Edit saved Character "victim": set trait "Alive" to False'. The variable '<victim name>' in the first action is circled in red.  
A red arrow points from the circled 'victim name' in the Author Goal parameters to the circled '<victim name>' in the Story Actions, illustrating the flow of variable binding from left to right.

- **Variables can be used from Left to Right, top to Bottom (they must be created before using them)**

# Variable Binding

- Variable referencing:

The screenshot displays the 'Gunshot' goal editor interface. It is divided into three main sections: Author Goal, Precondition, and Story Actions. The Author Goal section is titled 'Attack the Victim' and includes a 'Parameters' table with one entry: 'victim name' of type 'Text'. The Precondition section contains the text: 'There exists a Character, saved as "victim", where Tra'. The Story Actions section contains two actions: 'Display Text: "<victim name> turns around suddenly a bang erupts and our victim falls flat to the ground, cc' and 'Edit saved Character "victim": set trait "Alive" to False'. Red arrows indicate the flow of variable binding: one arrow points from the 'victim name' parameter in the Author Goal to the 'victim' variable in the Precondition, and another arrow points from the 'victim' variable in the Precondition to the '<victim name>' placeholder in the Story Actions. Below each section are control buttons: 'Change Goal ...' for the Author Goal, and 'New ...', 'Edit ...', 'Copy', and 'Delete' for both the Precondition and Story Actions sections.

**Gunshot**  
Edit Name ...

**Author Goal**  
**Attack the Victim**

Parameters

Name	Type
victim name	Text

**Precondition**  
There exists a Character, saved as "victim", where Tra

**Story Actions**  
Display Text: "<victim name> turns around suddenly a bang erupts and our victim falls flat to the ground, cc  
Edit saved Character "victim": set trait "Alive" to False

Change Goal ...    New ...    Edit ...    Copy    Delete    New ...    Edit ...    Copy    Delete

# Variable Binding – Precondition

- Precondition Statements can save traits, relationship target names, and relationship strength values to variables for later use
  - Save trait: There exists an Environment, where Trait “Description” is saved as variable “crimeSceneDescription”
  - Save entire object: There exists a Character, saved as “victim”.
- Create a variable and then use it again for comparison
  - Example: Match two characters with different names, and one is younger than the other. Two precondition statements, in order:
    - 1. There exists a Character, where Trait name is saved as variable “**nameVar**”, and Trait Age is saved as variable ‘**friendAge**’
    - 2. There exists a Character, where Trait name **!= nameVar**, and Trait Age **< friendAge**

# Variable Binding – Precondition

The image displays three screenshots of a software interface for editing environment precondition statements. Each screenshot shows a list of constraints and a 'Constraint Details' section.

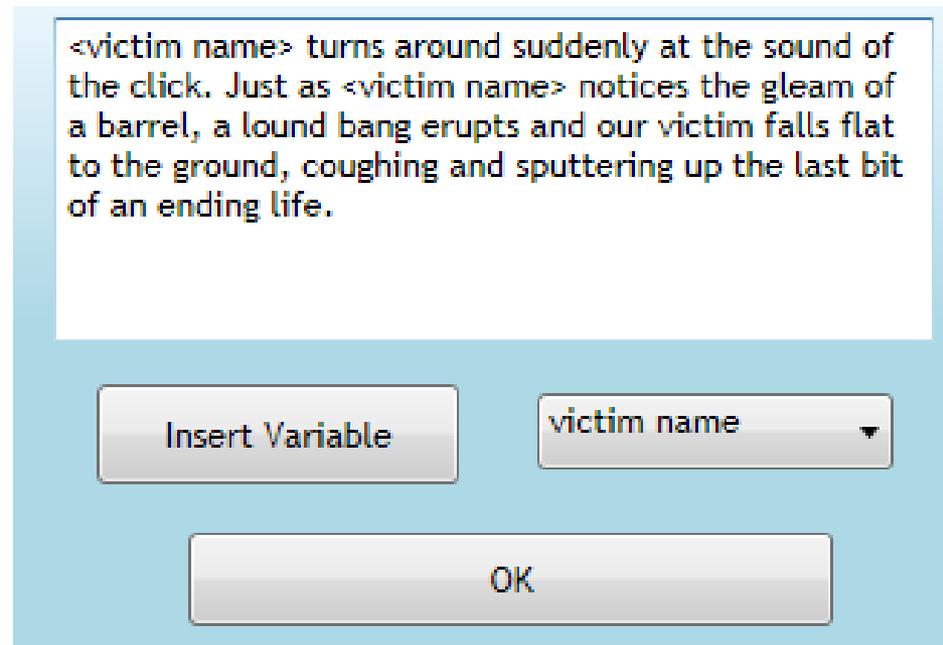
- Left Screenshot:** Titled 'Edit Character Precondition Statement'. The 'Save Character ...' button is circled in red. The constraint list includes 'Trait "Name" == victim name'. The 'Constraint Details' section shows 'Type of attribute to match' as a dropdown menu.
- Middle Screenshot:** Titled 'Edit Environment Precondition Statement'. The 'Save Environment ...' button is circled in red. The constraint list includes 'Trait "Potential Murder Location" == True', 'Trait "Name" ==', 'Trait "Description" is saved as variable "crimeSceneDescription"', 'Trait "Time" is saved as variable "crimeTime"', and 'Relationship "Nearby Location" target name is saved as variable'. The 'Constraint Details' section shows 'Type of attribute to match' as 'Trait', 'Description' as a dropdown, and 'Save Only' as a circled dropdown menu. Other options include 'Value saved as: crimeSceneDescription', 'Use Saved Variable', 'Edit this Variable', and 'Must always be true'.
- Right Screenshot:** Titled 'Edit Environment Precondition Statement'. The 'Save Environment ...' button is circled in red. The constraint list includes 'Trait "Potential Murder Location" == True', 'Trait "Name" !=', 'Trait "Description" is saved as variable "crimeSceneDescription"', 'Trait "Time" is saved as variable "crimeTime"', and 'Relationship "Nearby Location" target name is saved as variable "hic'. The 'Constraint Details' section shows 'Type of attribute to match' as 'Trait', 'Name' as a dropdown, '!=' as a circled dropdown menu, and 'Bob' as a text input. Other options include 'Use Saved Variable' and 'Must always be true'.

# Variable Binding

The screenshot displays the 'Gunshot' goal editor interface. At the top, there is a title 'Gunshot' with an 'Edit Name ...' button. Below the title are three main panels: 'Author Goal', 'Precondition', and 'Story Actions'.  
1. **Author Goal:** The goal is 'Attack the Victim'. It includes a 'Parameters' table with one entry: 'victim name' of type 'Text'. A 'Change Goal ...' button is located below the parameters.  
2. **Precondition:** The text reads 'There exists a Character, saved as "victim", where Tra'. A red circle highlights the word 'victim' in this text. Below the text area are 'New ...', 'Edit ...', 'Copy', and 'Delete' buttons.  
3. **Story Actions:** The text includes 'Display Text: "<victim name> turns around suddenly a bang erupts and our victim falls flat to the ground, cc' and 'Edit saved Character "victim": set trait "Alive" to False'. A red arrow points from the circled 'victim' in the precondition to the circled 'victim' in the story action text. Below the text area are 'New ...', 'Edit ...', 'Copy', and 'Delete' buttons.  
Vertical navigation arrows (up and down) are present between the panels.

# Making the story appear

- **Displaying Text** - printed text that can contain captured information (variables) from the rest of the plot fragment



# Making the story appear

- The time: 4 am, the place: the large, open city park in the middle of the city. Rachel Delores turns around suddenly at the sound of the click. Just as Rachel notices the gleam of a barrel, a loud bang erupts and our victim falls flat to the ground, coughing and sputtering up the last bit of an ending life. Jerry Fontana appears out of the darkness as the evil murderer, and escapes into the distance to seek shelter from the inevitable eyes of the police. Cut to a quiet single bedroom apartment. The shrill ring of a phone awakens Sherlock Holmes from a deep and relentless slumber ...

# Making the story appear

- The time: 9 pm, the place: a dark rain-drenched alley off 15th street. Kim Bates turns around suddenly at the sound of the click. Just as Kim notices the gleam of a barrel, a loud bang erupts and our victim falls flat to the ground, coughing and sputtering up the last bit of an ending life. Fred Gordon appears out of the darkness as the evil murderer, and escapes into the distance to seek shelter from the inevitable eyes of the police. Cut to a quiet single bedroom apartment. The shrill ring of a phone awakens Dick Tracy from a deep and relentless slumber ...

# Plot Fragments



Random Murderer

Edit Name ...

Author Goal

Do the Crime

Parameters

Name	Type
Victim Name	Text

Change Goal ...

Precondition

There exists a Character, where Trait "Name" != Victim  
There exists an Environment, where Trait "Potential M  
and Trait "Description" is saved as variable "crimeScen  
"Nearby Location" target name is saved as variable "hi

New ...

Edit ...

Copy

Delete

Story Actions

Display Text: "The time: <crimeTime>, the place: <cr  
Pursue Subgoal "Attack the Victim (Victim Name)"  
Display Text: "<murderName> appears out of the dark  
inevitable eyes of the police."  
Create new Crime Info Plot Point, saved as variable "c  
Edit saved Crime Info Plot Point "crimeInformation": s  
Edit saved Crime Info Plot Point "crimeInformation": s  
Create new Murderer Plot Point, saved as variable "m  
Edit saved Murderer Plot Point "murderInformation": s  
Edit saved Murderer Plot Point "murderInformation": s

New ...

Edit ...

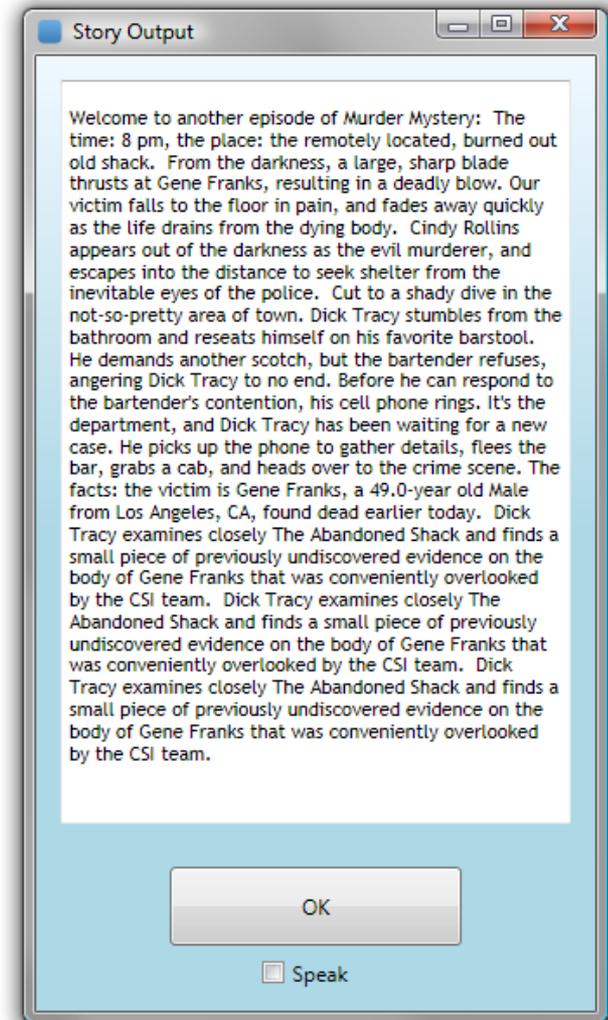
Copy

Delete

OK

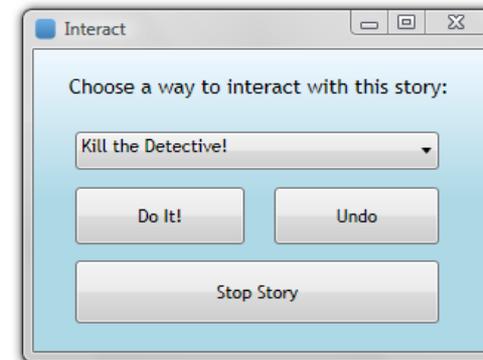
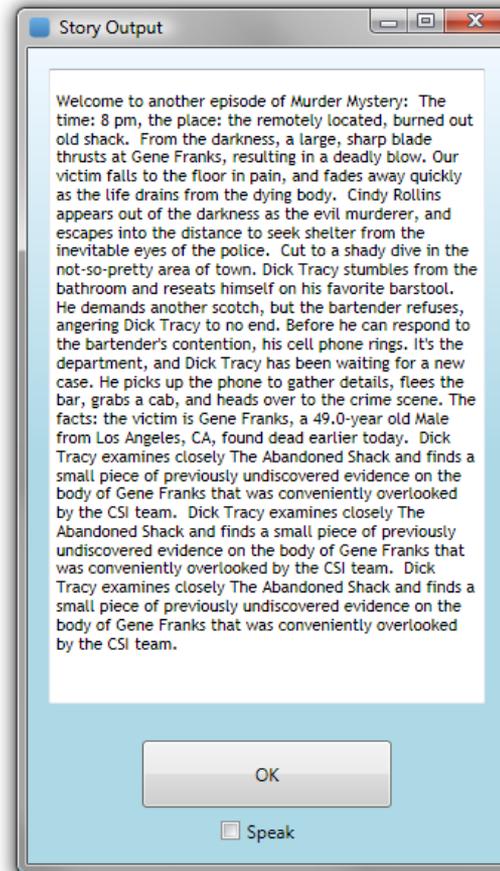
# Reading

- A single story is generated on the fly, to a text box, every time you click “Generate Story”
- It is slowed down, so readers can interact with it (next slide)



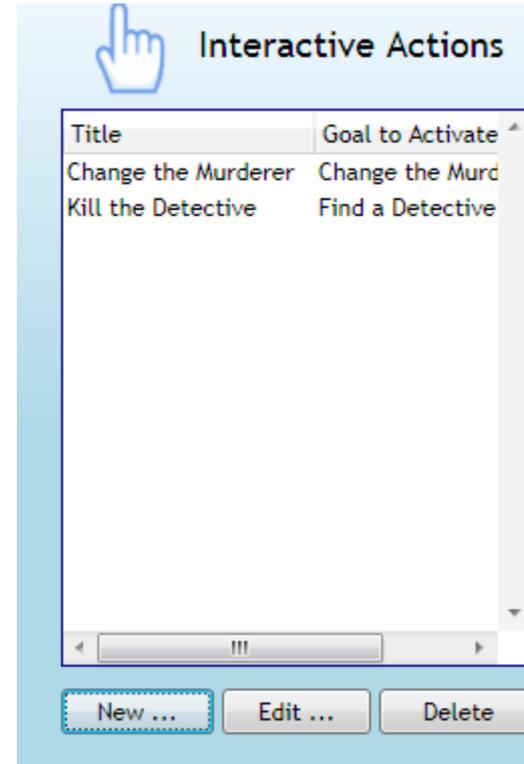
# Interactivity

- Interactive Actions
  - Third person, Asynchronous
  - Author-specified **goals** which reader can activate **at any time**
  - Reader can **interrupt** the story at any time and perform meaningful, author-designed actions
  - Murder mystery examples: “Kill the detective”, “Change the murderer”, etc



# Interactivity

- What are “Interactive Actions”?
- Just regular author goals with plot fragments, that the author allows to be activated during the reading of the story
- These goals are executed completely before continuing with the previous story
  - Any changes to the story world are kept
  - All subgoals are activated (this could create very long “interruptions” of the story)



# Interactivity

.....He accepts his fate quickly, picks up the phone, and gathers the details about his new case. Once the call is finished, he jumps in the car, and heads to the crime scene. The facts: the victim is Rachel Delores, a 51-year old woman from Lyndhurst, New Jersey, found dead earlier today.

Cut to the dark hideout of our ruthless killer. Before sleeping for the night, **Jerry Fontana** stares coldly into a bathroom mirror and removes a thin latex mask. Underneath the disguise appears the face of **John Smith**, the true villain in this story.

Sherlock Holmes decides to interview **John Smith**, a friend of Rachel, for any clues as to why our victim was murdered. He finds that Rachel and John had a recent argument over money ...

# Misc Plot Fragment Notes

- Must select **start goal**: use “Start Goal” check box, can’t have any parameters (by default, start goal is first one you create)
- **Creating** char’s/env’s/plot points within a Plot Fragment:
  - **1. New Action** “Create New ...”, save as a variable name, fill it with static numbers or text
  - **2. Edit Action**: To insert variables, perform edit action on char/env/pp saved in creation action,
- **Deleting** char’s/env/plot points within Plot Fragment
  - 1. Match in precondition, save to variable
  - 2. Use **Delete Action** on variable
- **Editing** char’s/env’s/plot points
  - 1. Match in precondition, save to variable
  - 2. For **every** trait/relationship to edit, you create **one Edit Action**, and select that saved variable in step 1.

The screenshot displays the configuration for a plot fragment titled "Do Murder Mystery". At the top, there is a document icon and the title "Do Murder Mystery". Below the title is an "Edit Name ..." button and a checked "Start Goal" checkbox. A section titled "Goal Parameters" contains a table with two columns: "Name" and "Type". Below this table is a "Story Act" section with a list of actions and their display text. The actions include "Pursue Subgoal 'Attack the Victim'", "Create new Crime Info Plot Point, s", "Edit saved Crime Info Plot Point 'cr", "Edit saved Crime Info Plot Point 'cr", "Create new Murderer Plot Point, sa", "Edit saved Murderer Plot Point 'mu", and "Edit saved Murderer Plot Point 'mu". At the bottom of the interface are three buttons: "New ...", "Edit ...", and "C".

# Notes

- Website: [http://eis.ucsc.edu/Wide Ruled](http://eis.ucsc.edu/Wide_Ruled) (Click on Project Page link for download/installation info)
- Tutorial posted online – Step by step instructions
- Documentation, sample story online, with these slides
- Wide Ruled is Windows XP, Vista, 7 only
  - Installation instructions posted online
  - Uses .NET 3.5 – need version 3.5 or later
  - Works with Parallels, VMWare Fusion on OS X, VirtualBox (probably)

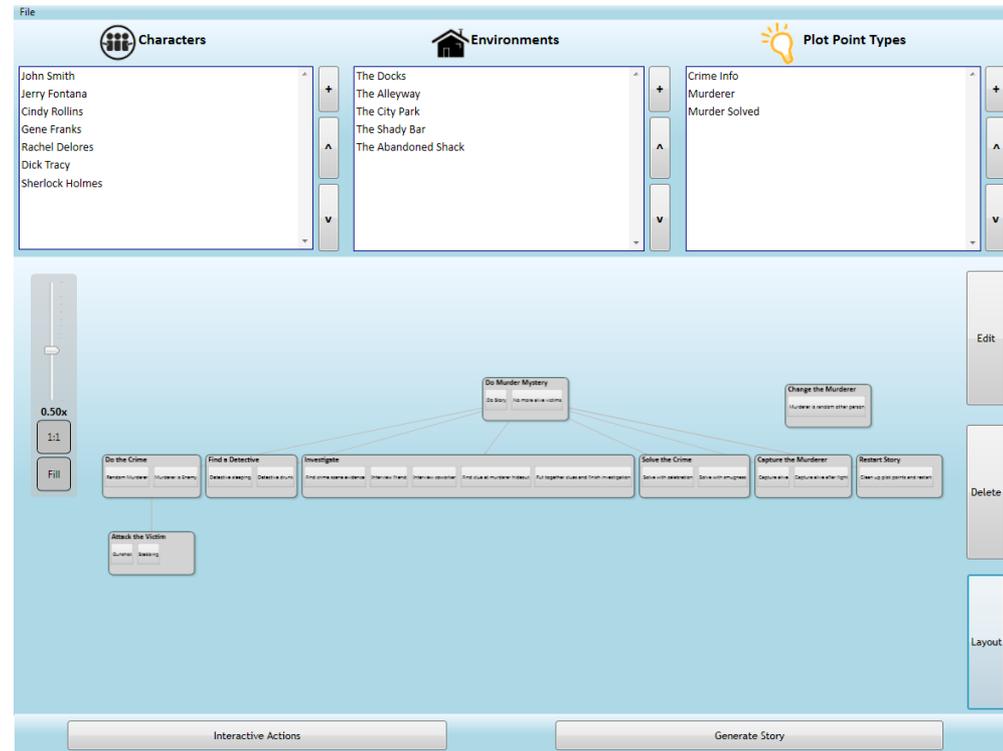
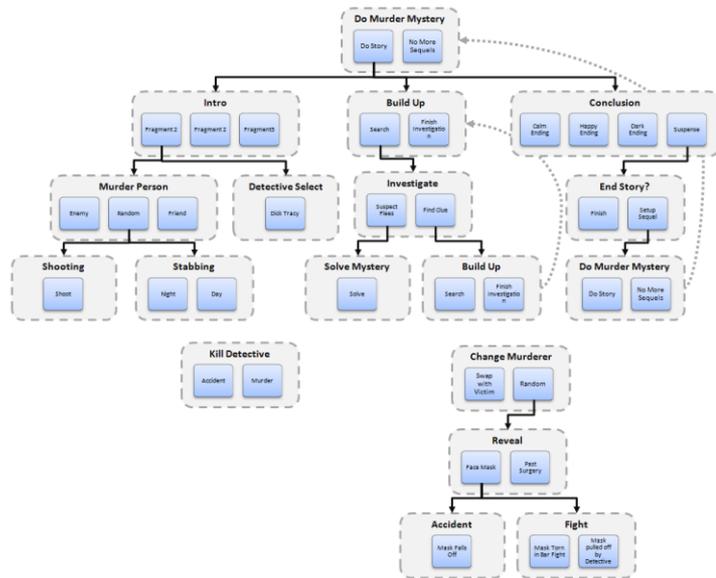
# Wide Ruled Deliverable

- .wr2 file
- Story Quality + Story Structure
- Structural Requirements
  - Must run (must generate story)
  - Must use every feature at least once
    - Characters – traits and relationships, Environments – traits and relationships
    - Plot Points – traits
    - Author goal – parameters
    - Plot fragments
      - Preconditions: All types (Character, Environment, Plot Point)
        - Save a trait to a variable
        - Use variable within precondition
      - Actions
        - Print text (with inserted variables), subgoal, calculate value, edit character, edit environment, create plot point, edit plot point, delete plot point
    - Interactive Actions – at least one action that changes the story outcome

# The future of Wide Ruled: **Story Canvas**

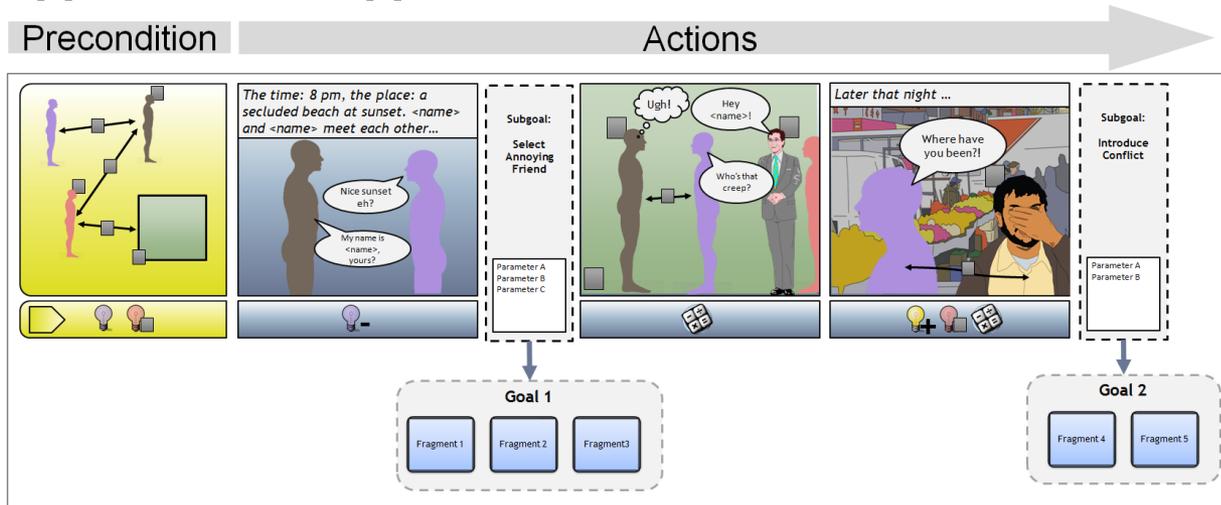
# Story Canvas

- Visual, Storyboard-based authoring
- Same UNIVERSE-like story model, new graphical interface



# Story Canvas

## ■ Editing Plot Fragments



# Story Canvas

## ■ Reading generated stories

*The time: 8 pm, the place: a secluded beach at sunset. Julie and Mark meet each other...*



Later that night ...



Buttons: Annoying friend finds out, Secret lover dies, Main character spills guts, <<, >>

**MurderMysteryInteractive**



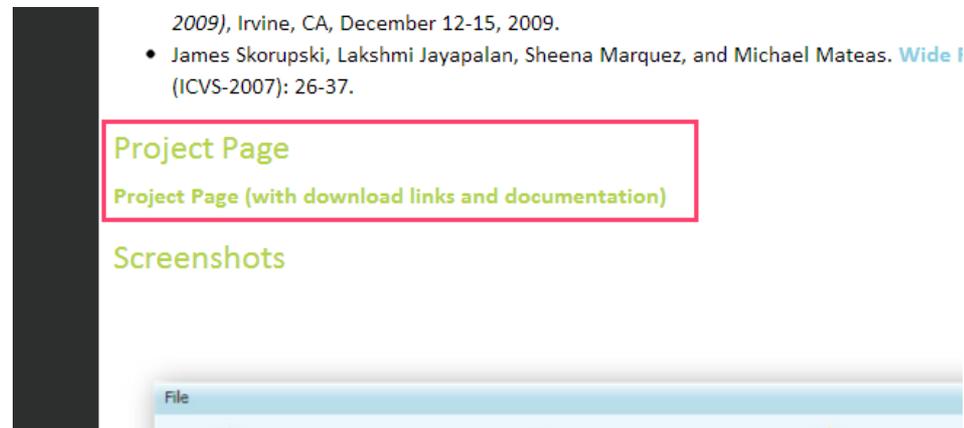
Buttons: Annoying friend finds out, Secret lover dies, Main character spills guts, <<, >>

# Story Canvas

- Very early version for debugging/initial testing  
– fragile/buggy/etc
- Experimental usage for limited set of volunteers
- Email me ([jskorups@soe.ucsc.edu](mailto:jskorups@soe.ucsc.edu)) if interested

# Contact

- Website: [http://eis.ucsc.edu/Wide Ruled](http://eis.ucsc.edu/Wide_Ruled)
  - Click on “Project Page” link



- Support: Piazza + Email:  
[j Skorups@soe.ucsc.edu](mailto:j Skorups@soe.ucsc.edu)

# Story Canvas

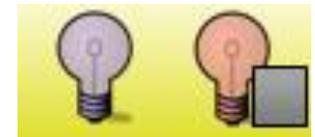
(Extra Slides!)

# Story Canvas

## ■ Authoring Story Objects

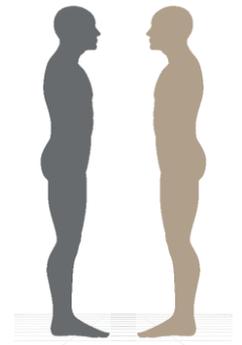
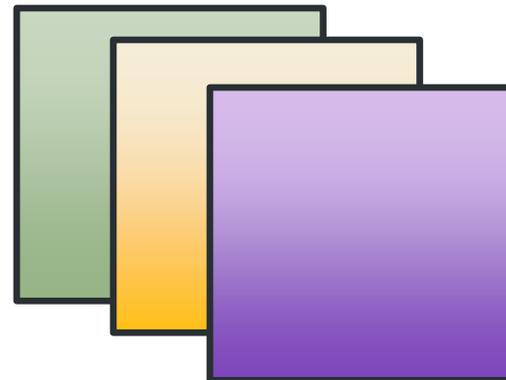
### ■ Static Characters and Environments

- WR2 char's/env's with:
- Avatar images
  - Provided and user assignable
  - Characters have a small finite set of poses



### ■ Dynamic (unbound during authoring)

- Anonymous colored icons

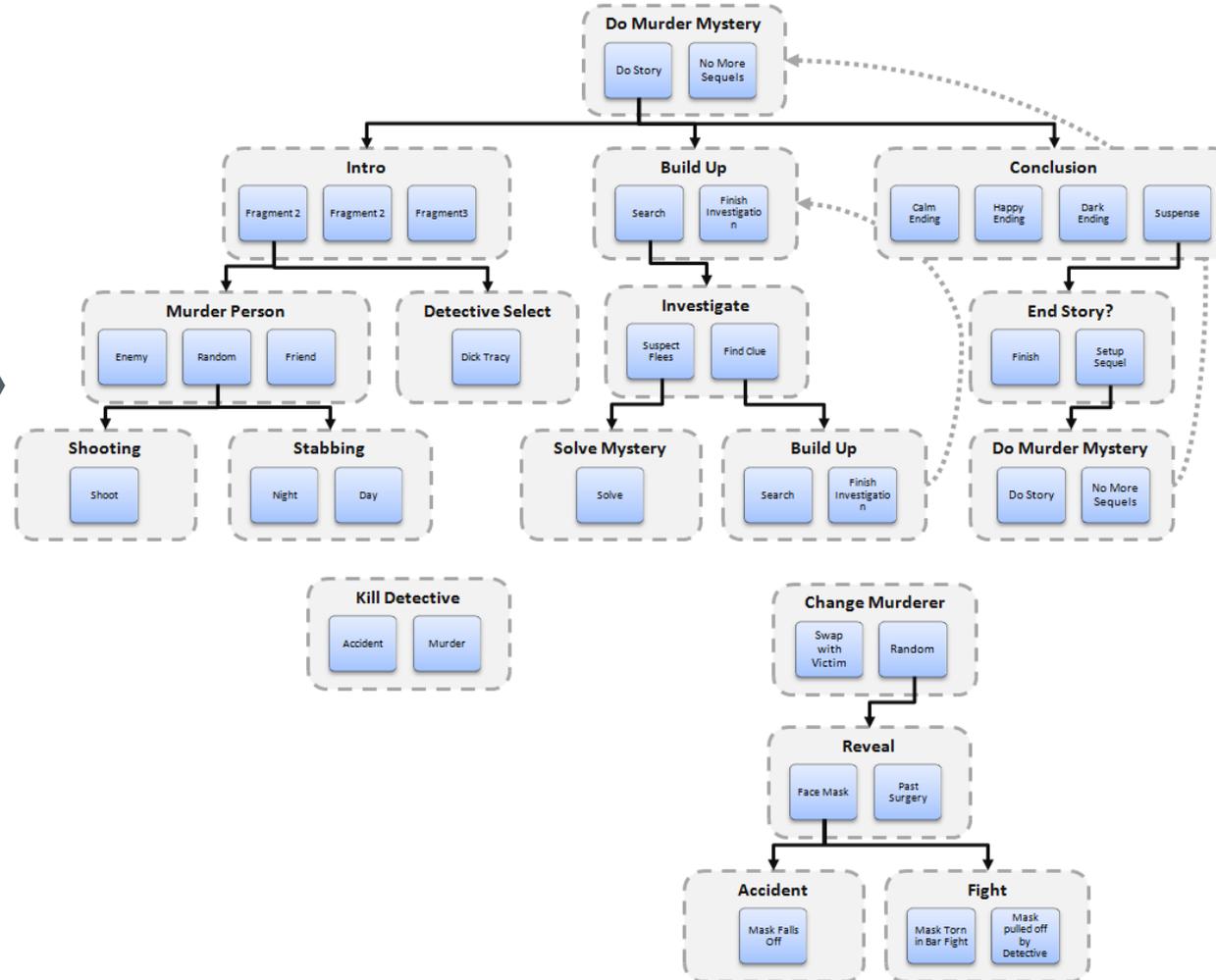
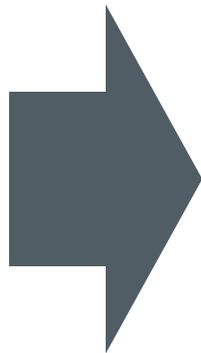


# Story Canvas

## ■ Author goal and plot fragment hierarchy

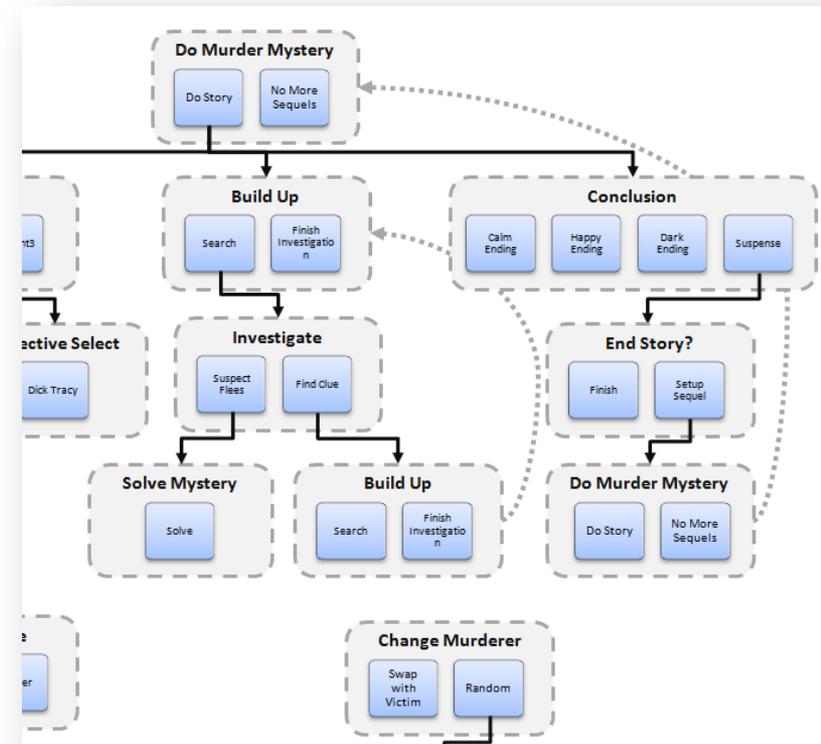
### Goals and Plot Fragments

- ▲ Do Murder Mystery
  - ▷ Do Story
  - No more alive victims
- ▲ Do the Crime (Text Victim Name)
  - ▷ Random Murderer
  - ▷ Murderer is Enemy
- ▲ Attack the Victim (Text victim name)
  - Gunshot
  - Stabbing
- ▲ Find a Detective (Text Detective Name)
  - Detective sleeping
  - Detective drunk
- ▲ Investigate
  - ▷ Find crime scene evidence
  - ▷ Interview friend
  - ▷ Interview coworker
  - ▷ Find clue at murderer hideout
  - Put together clues and finish in
- ▲ Solve the Crime
  - Solve with celebration
  - Solve with smugness
- ▲ Capture the Murderer



# Story Canvas

- Hierarchical List → Interactive Graph
- Goals encompass fragments
- Add/Edit/Delete Goals and Fragments
- Visualizes one or more hierarchies
- Visualizes recursion

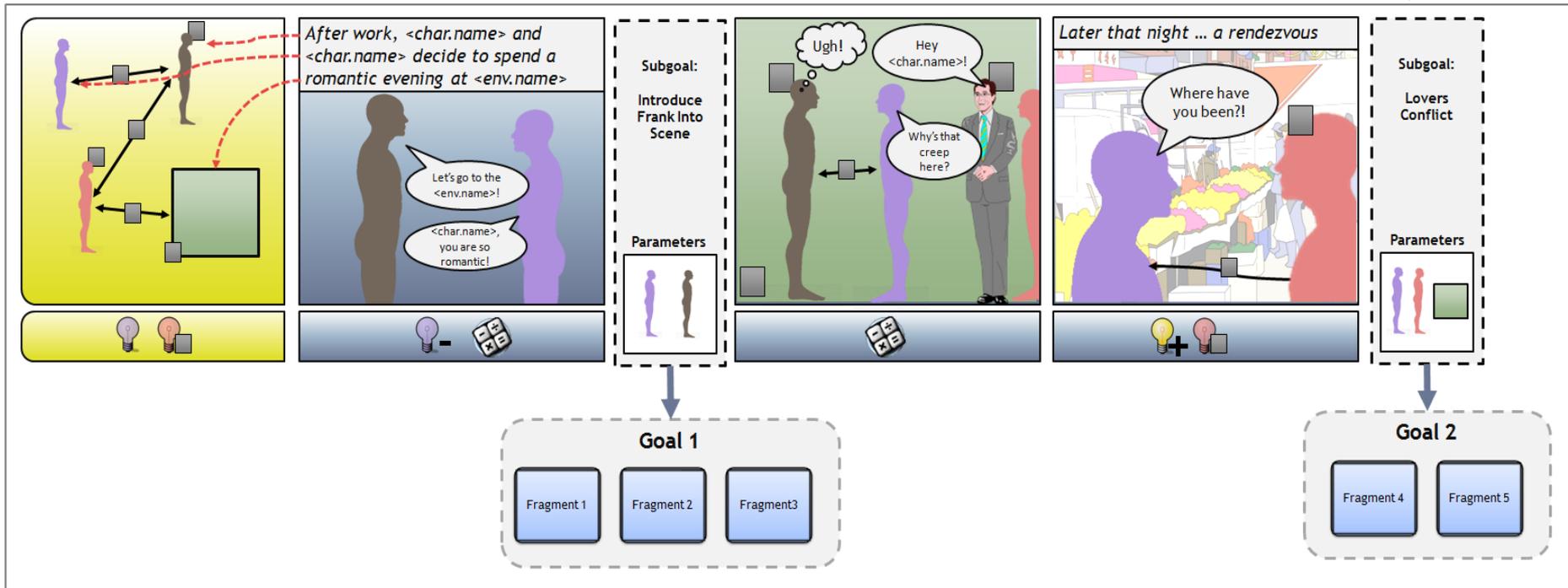


# Story Canvas

- Visual precondition and story actions

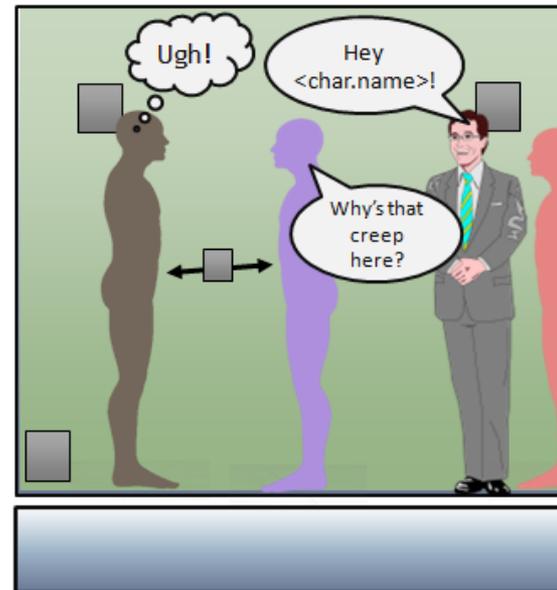
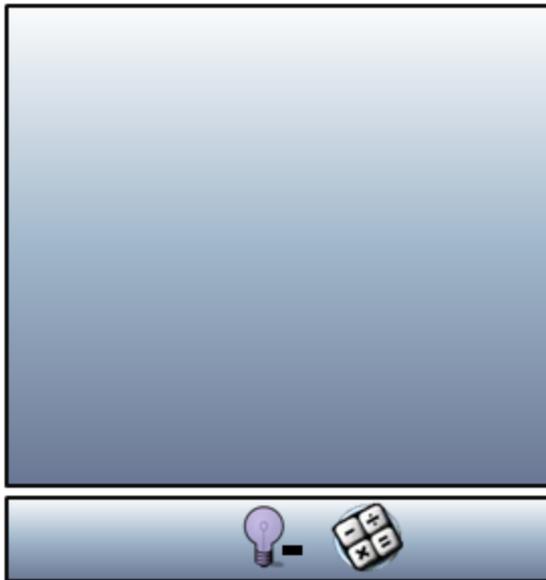
Precondition

Actions



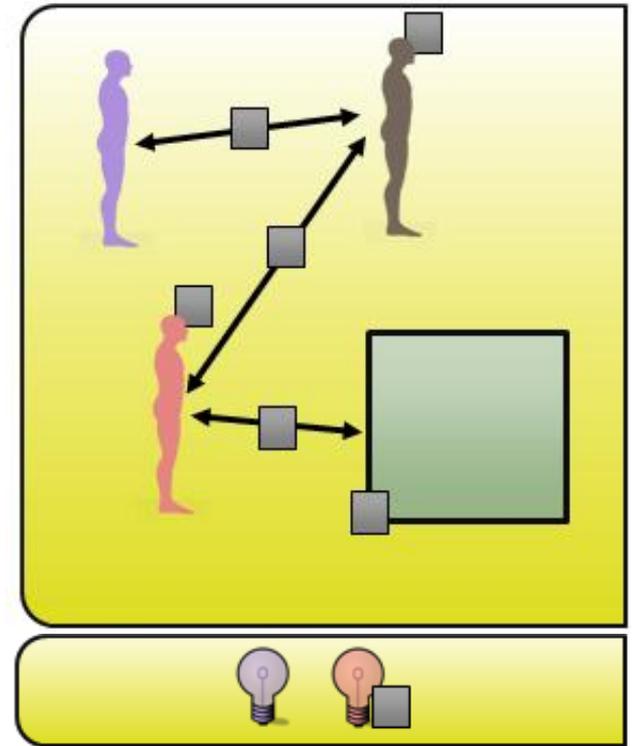
# Story Canvas

- Visible and invisible pane pieces
  - Visible: Characters and Environments
  - Invisible: Plot Points and Calculations
  - Panes with no visible elements hidden in resulting story



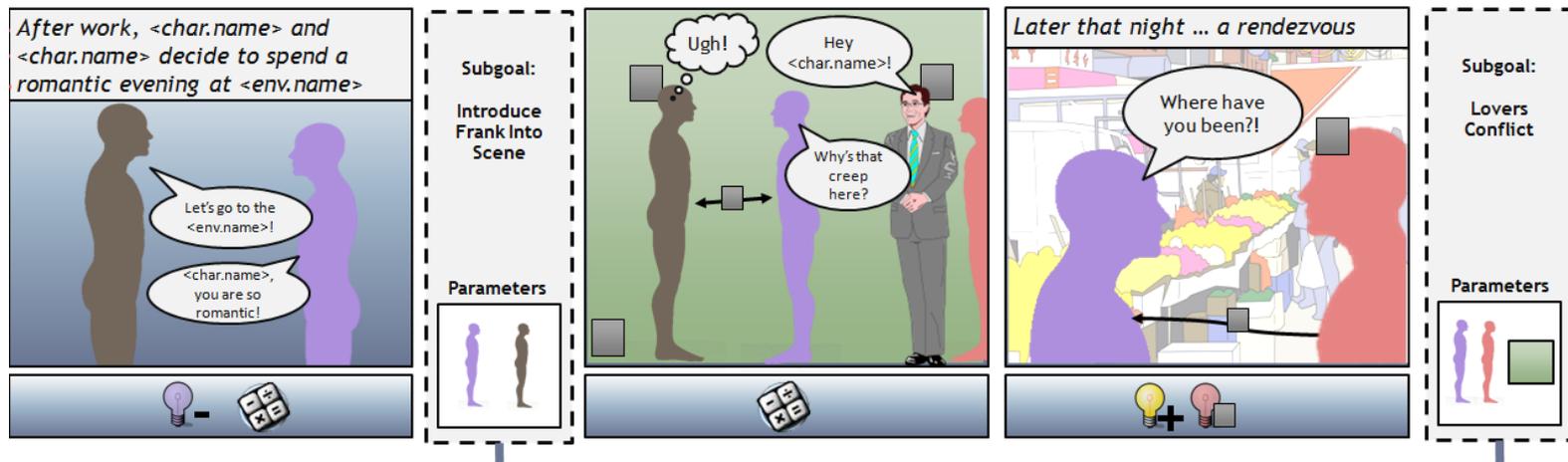
# Story Canvas

- Precondition Pane
  - Two kinds of constraints
    - Inter-object (graph structure)
      - `Char1.Age > Char2.Age`
      - `Char1.Enemy == Char2`
    - Intra-object (floating box)
      - `Age < 24`
      - `Name == "Bob"`
      - `Paranoid == false`
  - Unbound characters / environments / plot points
  - Gray box = editable constraint lists
  - No saving and naming of temporary variables



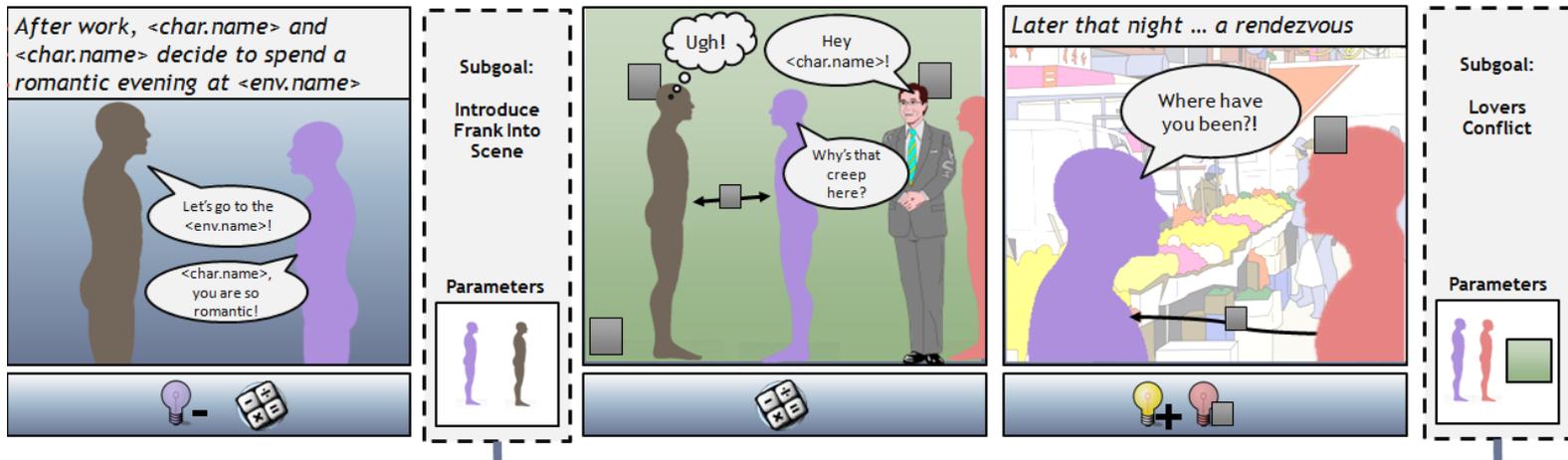
# Story Actions

- Parameterized text output
  - Speech
  - Thought
  - Narration



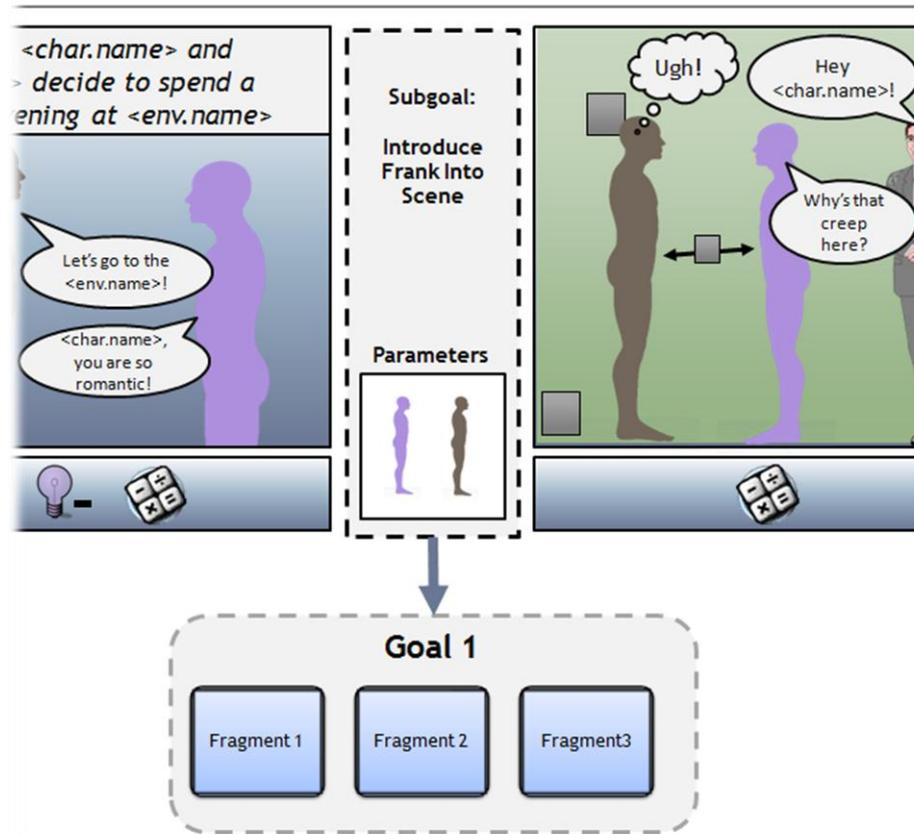
# Story Actions

- Character/environment editing
  - Create relationship (graph structure)
    - Char1.Enemy = Char2
    - Char1.Friend = Jerry Smith (static)
  - Edit Trait/Relationship (floating box)
- Plot Point editing/creation/deletion
- Calculation of new values



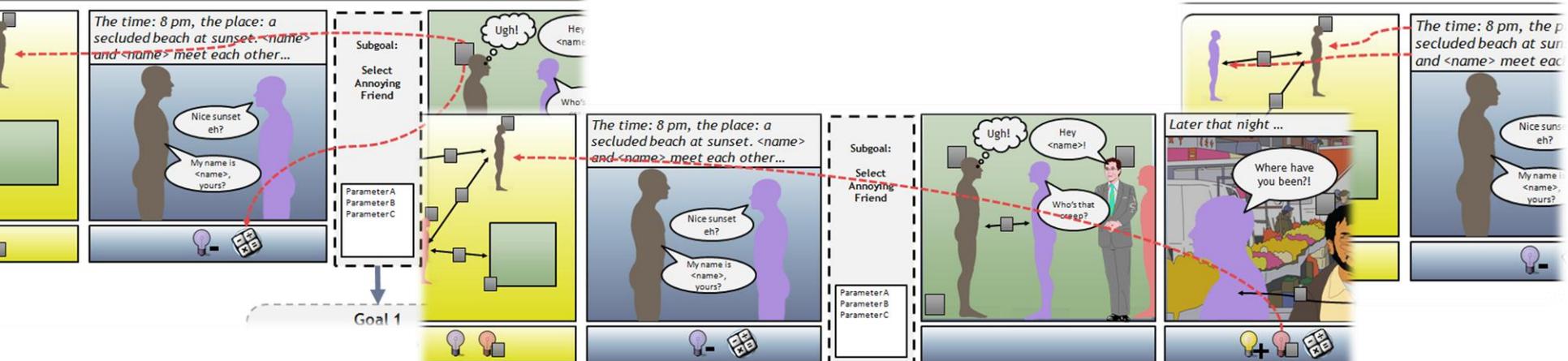
# Story Actions

- Subgoaling with parameters



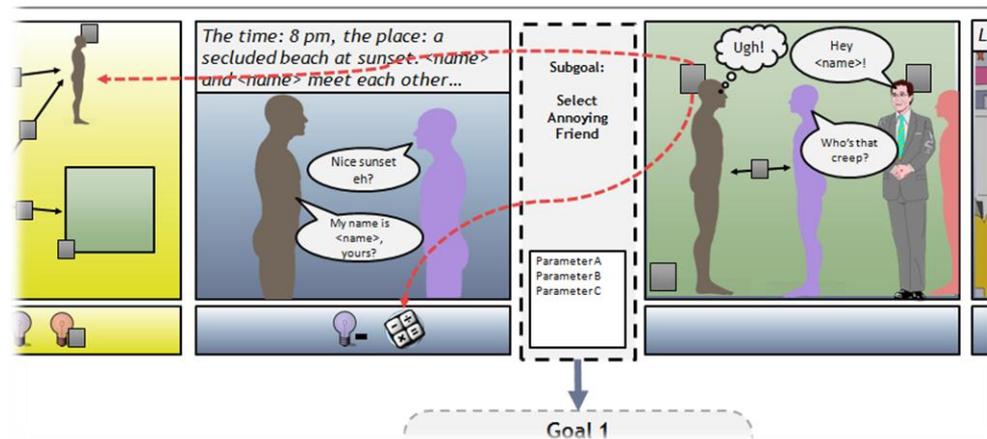
# Story Action Variables

- Variable references
  - Author-customizable named matched object names
    - “Character1”, “TheBoyfriend”
    - References: Character1.Name, TheBoyfriend.Age
    - No individual variable names: char1name, char1age, etc
- All objects in preconditions and all of their contained information is always available
- Information dependencies visible when selected



# Variable Referencing

- Variable modification explicit in WR2 (ordered set of story actions)
- Visual domain means ambiguous ordering of assignments
- Solution: use panes as temporal guide – only reference information from previous panes



# Reading

- Generated panes ground out dynamic story objects into static images
- Reader-controlled pace



Annoying friend finds out

Secret lover dies

Main character spills guts

<<

>>

# Story Canvas

- Wide Ruled 2 → Story Canvas 1
  - Text-based → Comic book (**text + graphics**)
  - **List-based** story hierarchy → **visual graph-based** story hierarchy
  - Elimination of temporary variable management in preconditions
  - Elimination of variable names completely
  - **Global** interaction actions → **Contextual** interactive actions
  - Reader-controlled story pace
  - New features: static characters/environments, visual composition control