

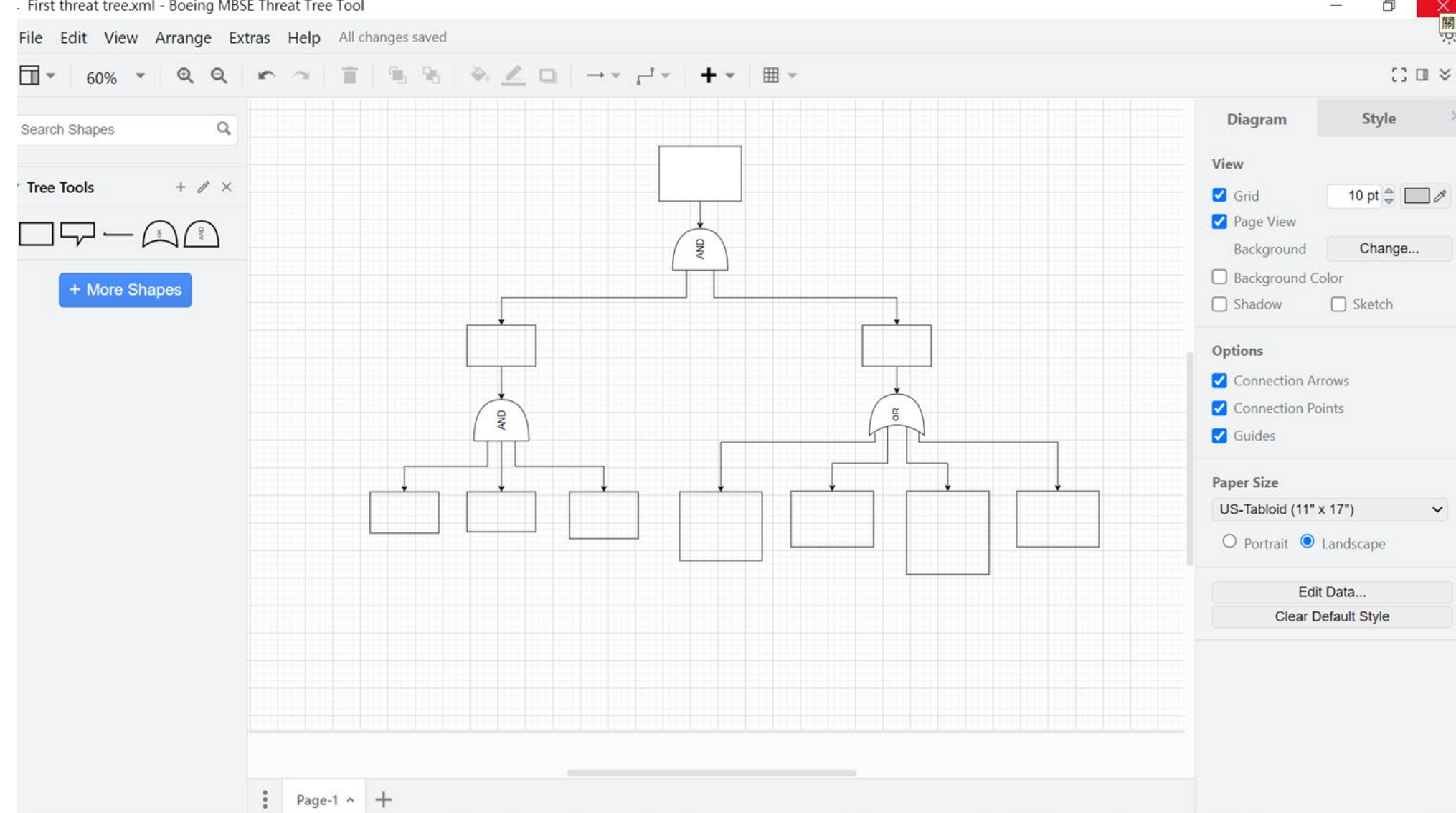
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## Threat Tree

- A threat tree is a graphical representation that depicts the potential threats that a system may face.
- It is structured hierarchically, starting with a specific goal that an attacker may want to achieve and working their way up to achieve the ultimate threat.
- It is important for Boeing to build and analyze threat trees in the early stage of plane design as Boeing can prioritize their security efforts and allocate resources to strengthen their defenses against the most critical and likely threats.

## Threat Tree Draw Tool

- Draw tool offering shapes and tree templates for drawing threat trees
- Eligible for editing default data of shapes, adding shapes, and adding templates
- Able to export tree files as XML for further analysis

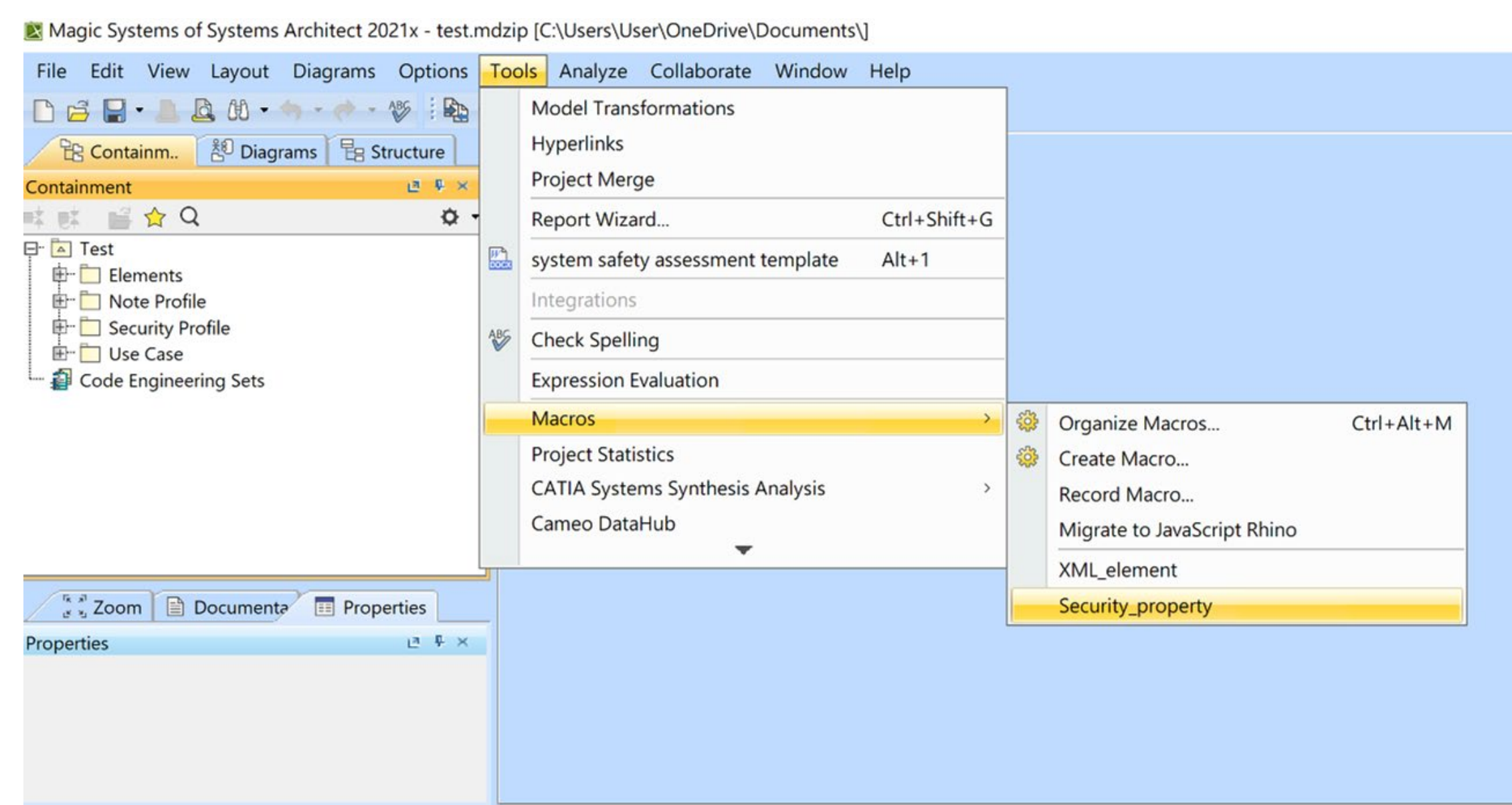


## Draw Tool Features

- Based on JavaScript
- Default shapes including AND gates, OR gates, blocks, arrows, and Notes
- Each shape providing data editing features for storing data for further analysis
- Offering default threat tree templates
- Able to add tree templates by adding tree template XML files into projects and editing XML setting files
- Export tree files as commonly used format such as XML

## XML Parser

- Threat Tree Draw Tool exports the tree in XML format
- A XML parser is needed to parse the data of the tree into Cameo
- The parser is run by Cameo's in-built feature called Macro

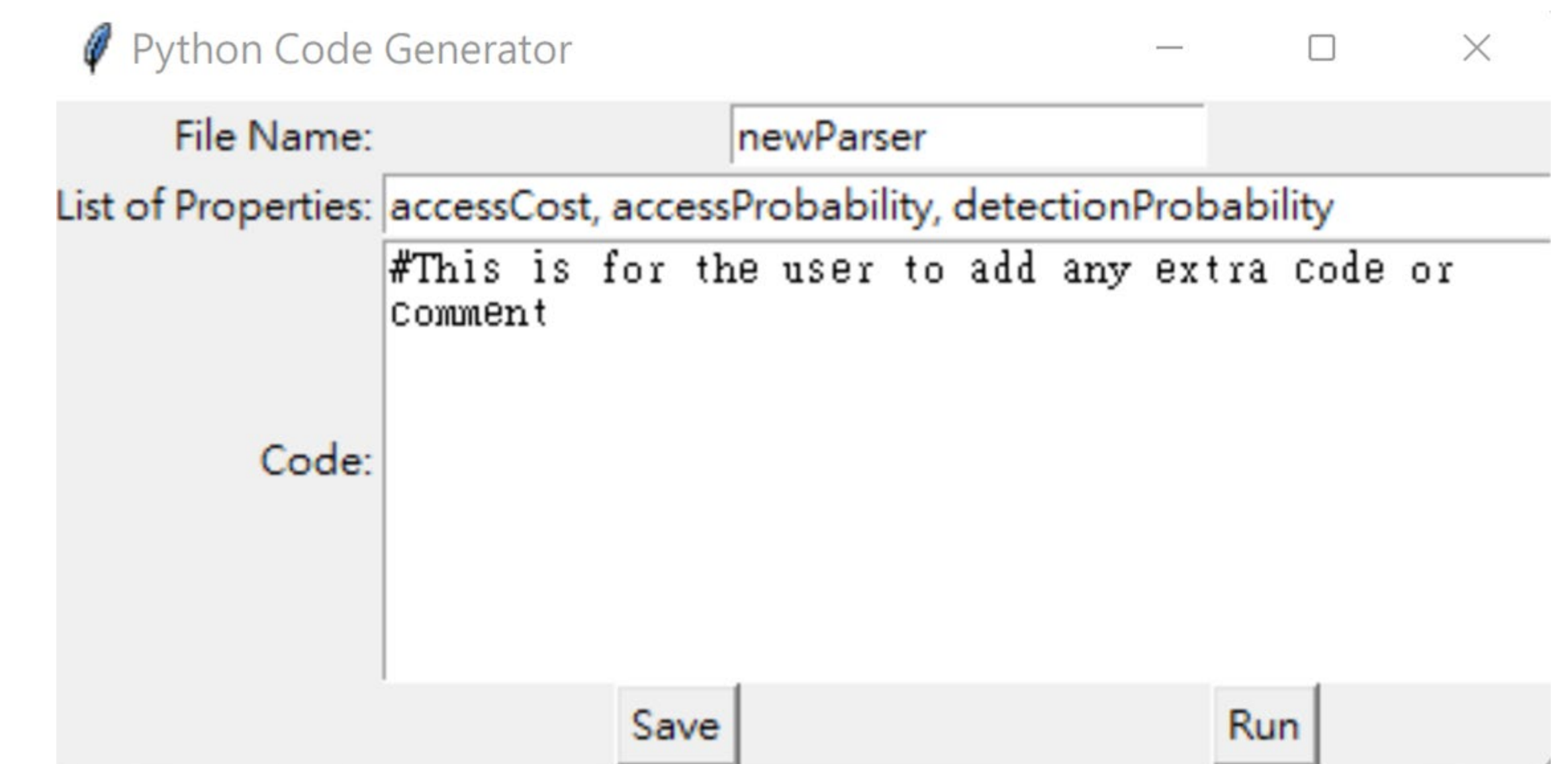


## Parser Features

- Python + Java (Jython)
- Identification of Threats, Gates, Associations, Note
- Format of the threats "Stereotype"
- Threat Analysis Algorithm
- Scoring Algorithm

## GUI for XML Parser

- Due to Cameo's in-built jython library (java+python), some portion of the parser needs to be changed manually according to the threat tree properties
- We use Python library called tkinter to create a GUI for the user to enter threat tree properties
- GUI will write a new parser based on user inputted properties



## Cameo

- A model based software engineering tool that currently in use by Boeing
- Offers the ability to build system model graphically as the base for generating source code
- Provides Macro for writing scripts based on Jython/ Java/ JavaScript
- Equipped with convenient user interface for drawing UML and other system model diagram or flow charts.
- Able to store system data with generic tables and other kinds of data models.

