



# Syntax highlighting for SD modeling

## Speed up your grasp of convoluted equations

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# Problem Statement



- long & convoluted equations are difficult to grasp
  - especially concerning models built by other modelers
  - subscripts/arrays with many dimensions
  - working with whole models in text format implies additional syntax (units, comments, ...)
- Simple example (World3, .mdl)

```
resource technology change rate =  
    IF THEN ELSE ( Time >= POLICY YEAR ,  
        Resource Conservation Technology  
        * resource technology change rate multiplier , 0)  
    ~    1/year  
    ~    RESOURCE TECHNOLOGY IMPROVEMENT RATE (NRATE-##).  
    |
```

0:30-2:00

# Approach or Dynamic Hypothesis



- Syntax highlighting (color coding) helps
  - **color**, **fonts**, *italic*, **bold** underline, **highlight**
- Prototype in Notepad++ for Vensim.mdl:  
[https://github.com/julianM5/vensim\\_syntax\\_highlighting](https://github.com/julianM5/vensim_syntax_highlighting)
- Simple example (World3, .mdl):



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    |
```

2:00-3:30

# Progress, Insights, and Questions



- Help make it better:
  - parenthesis-coloring? `((syntax)+(syntax(syntax)))/(more syntax))`
  - find and fix bugs
  - Other file types for Vensim (.cmd, .cin, .vgd)
  - Other modeling softwares
  - other text editors & other operating systems
  - Syntax highlighting **functionality within SD softwares**