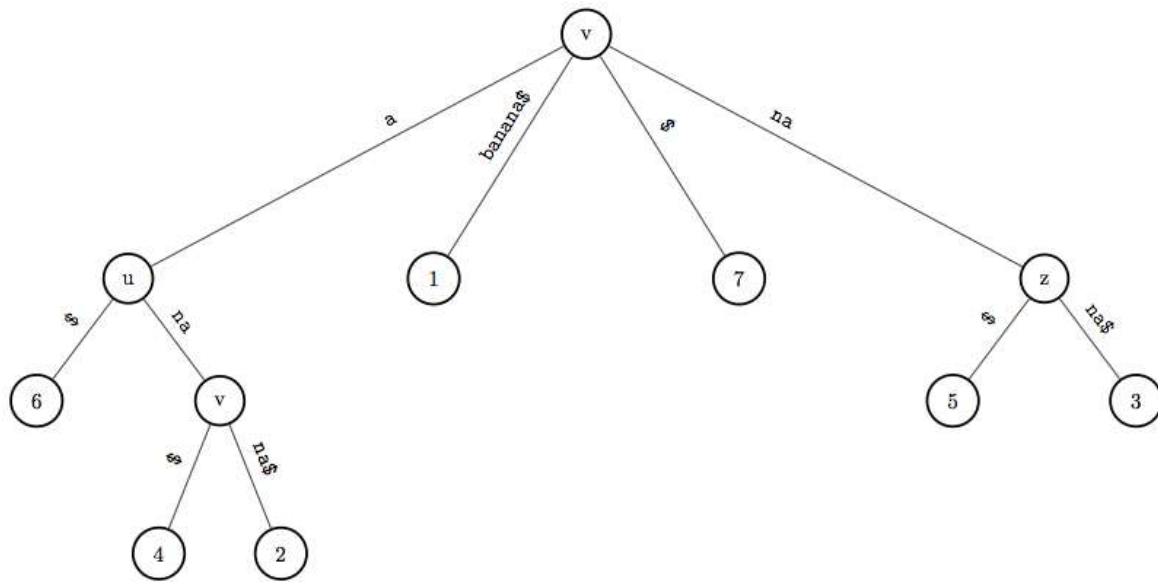


# TranslateToLatexTree

This is a python script that compiles a simple text representation of a tree in a pretty latex figure.

## Basic usage

Let's say you want to draw this tree:



Then you should create a txt file where each line describes a level of the tree, starting from the root:

```
line 1: v
```

In the second line you want to describe 4 nodes. Each node description is separated by the others with the symbol '|' and contains the label of the incoming edge (if any) and the label of the node, encoded with this syntax:

```
[label of the incoming edge] ; [label of the node]
```

Then the second will be:

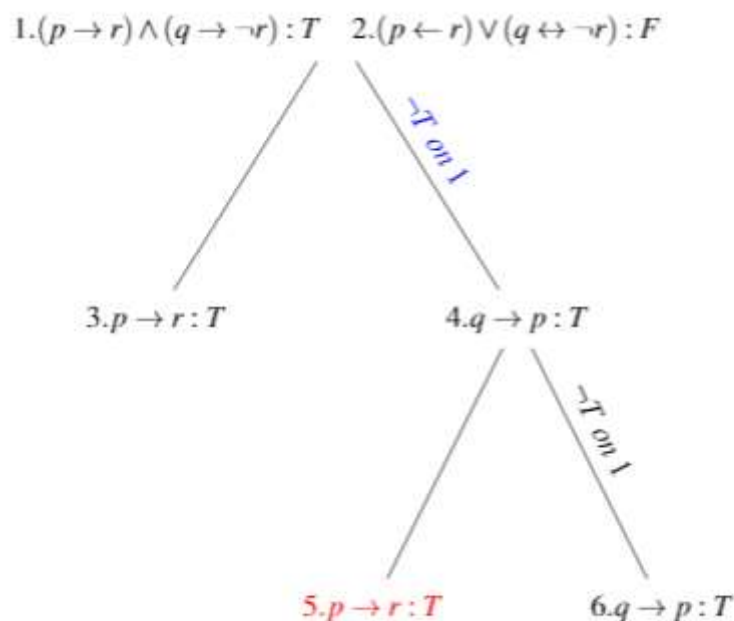
```
line 2: a;u| banana$;1 | $;7 | na;z
```

In the third line, you have nodes with different parents: the description you will put at the beginning of the line will refer to the leftmost node at the upper level (in this case  $u$ ). You can change the parent node using the symbol '@': the parent will become the next parent node on the right (in this case  $1$ ). If the next parent node does not have child nodes, leave the description empty.

Third line will be:

```
line 3: $;6 |na;v @ @ @ $;5 | na$;3
```

created in the previous level: the previous level contains four nodes and only the second has child, then:



# How to run this script

My folder looks like this:

OneDrive > DTU > 2021-fall > treepy >						Search treepy
Name	Status	Date modified	Type	Size		
.git	✓	2021/9/23 0:54	File folder			
.idea	✓	2021/9/23 4:16	File folder			
examples	✓	2021/9/23 4:17	File folder			
LICENSE.txt	✓	2021/9/23 0:54	Text Document	1 KB		
readme.md	✓	2021/9/23 4:20	Markdown File	4 KB		
treepy.py	✓	2021/9/23 4:16	Python File	6 KB		

In folder `example`, there is a `txt` file which is used to describe a tree.

So I would try the command following:

```
{Python_path} .\treepy.py {tree_description_file}
```

```
Terminal: Local x + v
PS D:\OneDrive\DTU\2021-fall\treepy> D:\development_lib\python\python39\python.exe .\treepy.py .\examples\banana.txt
```

Run it, and you see:

```
PS D:\OneDrive\DTU\2021-fall\treepy> D:\development_lib\python\python39\python.exe .\treepy.py .\examples\banana.txt
570
PS D:\OneDrive\DTU\2021-fall\treepy>
```

A `xxx_result.txt` file has been generated:

banana.txt	✓	2021/9/23 3:58	Text Document	1 KB
banana.txt_result.txt	✓	2021/9/23 4:22	Text Document	1 KB

The code in `xxx_result.txt` looks like:

```
\node[punkt] {$1.(p \rightarrow r) \wedge (q \rightarrow \neg r):T \quad 2.(p \leftarrow r) \vee (q \leftarrow \neg r):F$}
  child {node[punkt] {$3.p \rightarrow r:T$}}
edge from parent
  node[kant,above,pos=.4]{ }
  child {node[punkt] {$4.q \rightarrow p:T$}}
  child {node[punkt] {$\textcolor{red}{5. p \rightarrow r :T}$}}
edge from parent
  node[kant,above,pos=.4]{ }
  child {node[punkt] {$6.q \rightarrow p:T$}}
edge from parent
  node[kant,above,pos=.4]{$\neg T \ \text{on} \ 1$}
edge from parent
  node[kant,above,pos=.4]{$\textcolor{blue}{\neg T \ \text{on} \ 1}$};
```

Copy it and paste it to your overleaf in the following way:

```
%start from here
\begin{tikzpicture}[
grow=down,
level 1/.style={sibling distance=5cm,level distance=4cm},
level 2/.style={sibling distance=4cm, level distance=4cm},
level 3/.style={sibling distance=4cm, level distance=4cm},
kant/.style={ text centered, sloped},
every node/.style={text ragged, inner sep=2mm,align=center},
punkt/.style={ shade, top color=white,
bottom color=white, draw=white, very thick }
]

% Insert generated code here%

\end{tikzpicture}

%end here
```

The tree is drawn using the **tikz package**. You will have to import the package *tikz*. As you can see the preamble of tikzpicture allows you to personalize your tree .

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Ref: <https://github.com/diegoceccarelli/treepy>