Lab 8 Resource Document: Tree Printing

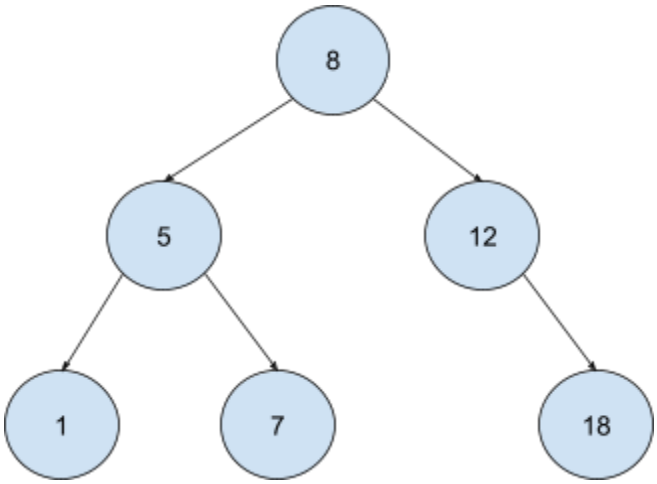
Long Assignment 8: street.py

In the upcoming long assignment `street.py` , you cannot use any loops -- only recursion. This ban includes iterative functions and methods that Python offers by default. Luckily, you've already written recursive implementations of `max`, `join`, and `replace` in ICAs 18-21! You can find the ICAs and solutions on the class website.

Keep in mind as you go into the project that you can lose autograder points if you use loops to bypass the recursion requirement!

Tree Representations

With trees, you've learned about their typical representation in diagram:



Each node has a value, then references to left and right children. When printing trees, however, we use a format that includes parentheses to represent these relationships. Here is what this tree would look like in the printed form with parentheses:

```
(8 (5 (1 None None) (7 None None)) (12 None (18 None None)))
```

We can see that each node is grouped like so:

```
(Value LeftChild RightChild)
```

When there's no left or right child, we see `None`. Here's a color-coded version of the above diagram that shows the matching pieces: