

# Climbing the XML Tree

Let XPath be your ladder

Presented by Annie Glerum  
OLAC Preconference - October 26, 2017



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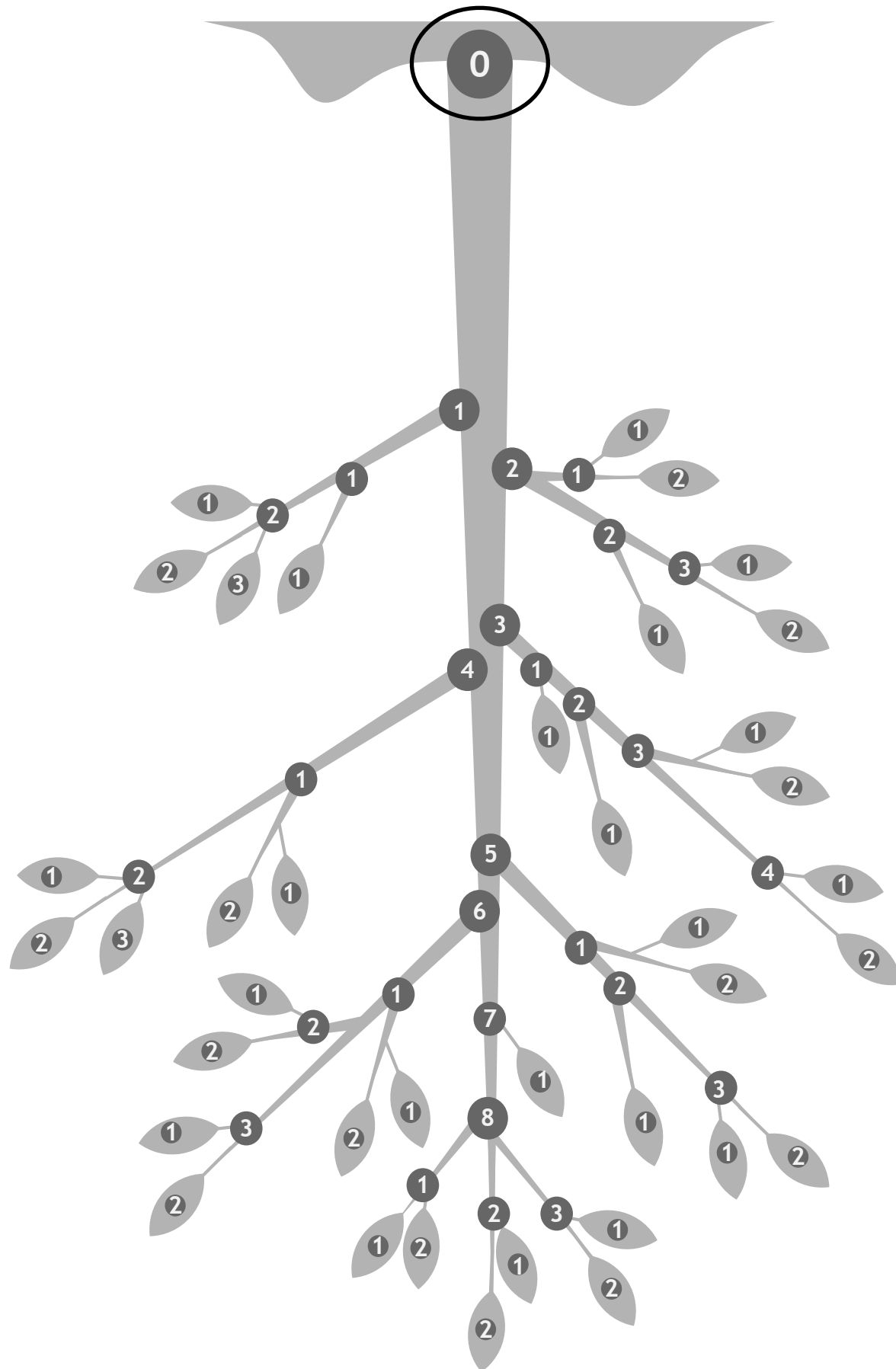
- ▶ text

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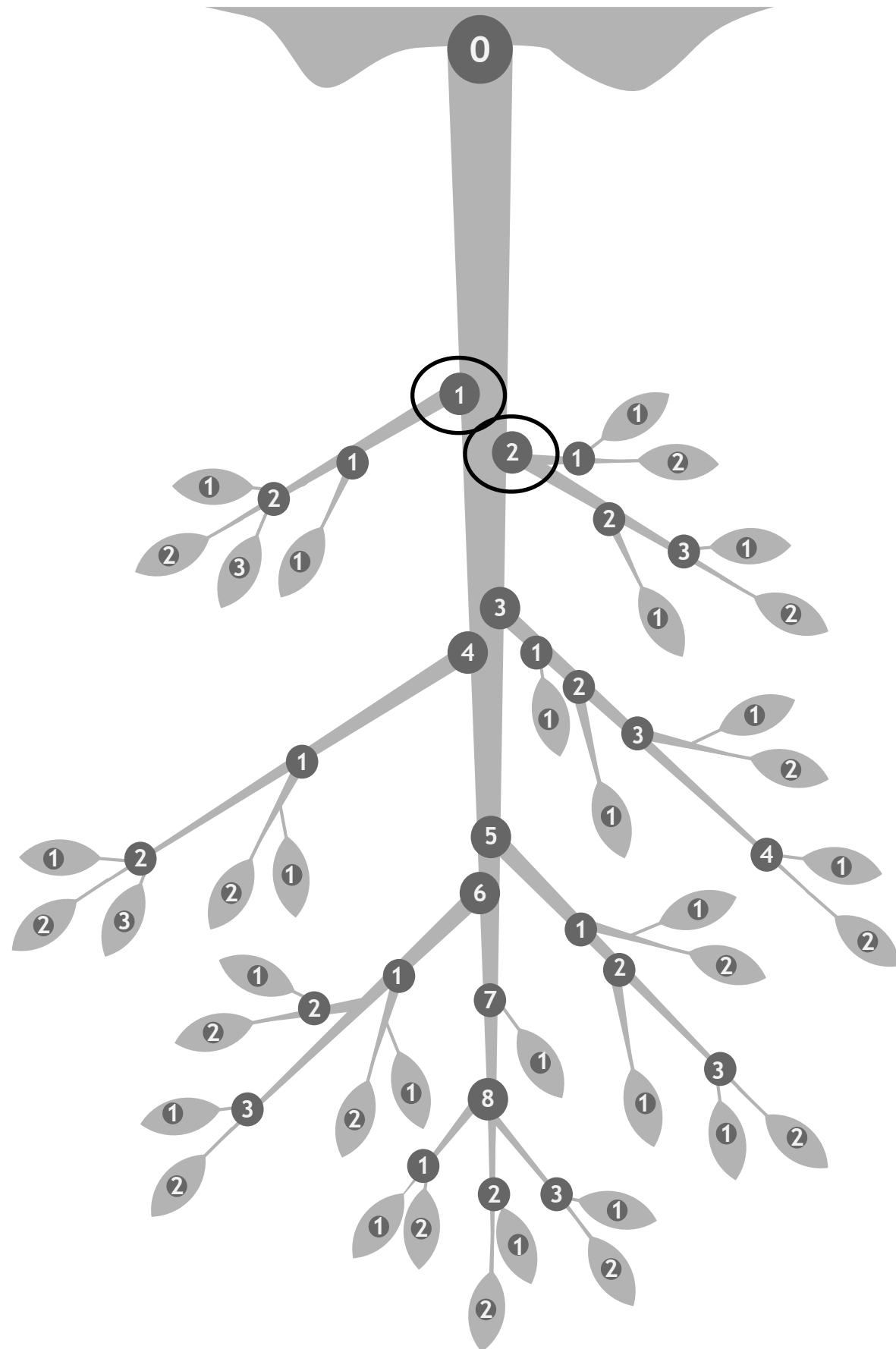
- 2

# XML Node Tree



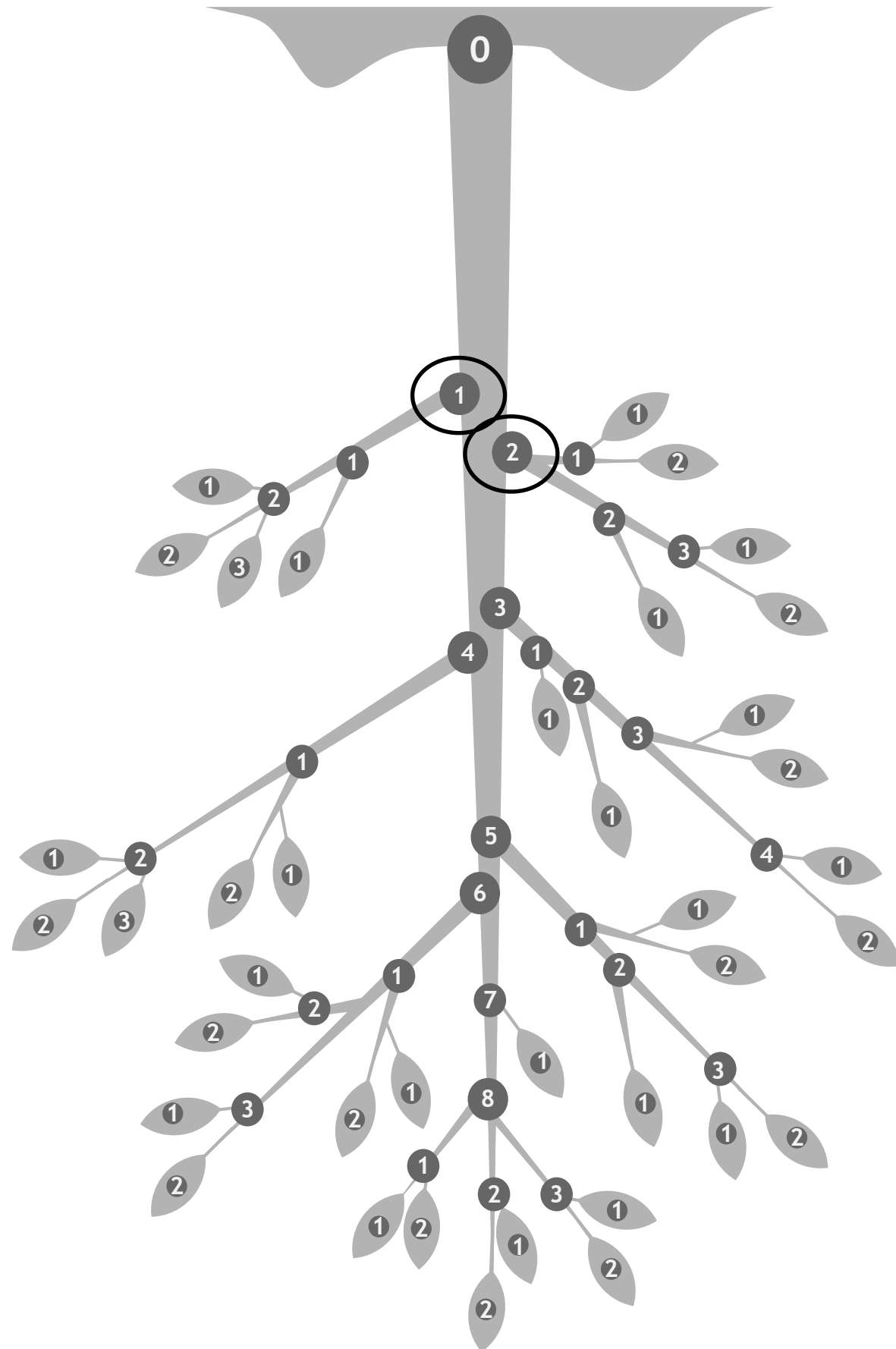
- ▶ Document
  - ▶ Root Element
    - ▶ Element 1
      - ▶ Element 1
        - ▶ Element 1
          - ▶ text
    - ▶ Element 2
      - ▶ Element 1
        - ▶ text
      - ▶ Element 2
        - ▶ text
      - ▶ Element 3
        - ▶ text
  - ▶ Element 2
    - ▶ Element 1
      - ▶ Element 1
        - ▶ text
      - ▶ Element 2
        - ▶ text
    - ▶ Element 2
      - ▶ Element 1
        - ▶ text
    - ▶ Element 3
      - ▶ Element 1
        - ▶ text
      - ▶ Element 2
        - ▶ text
      - ▶ Element 3
        - ▶ text

# XML Node Tree



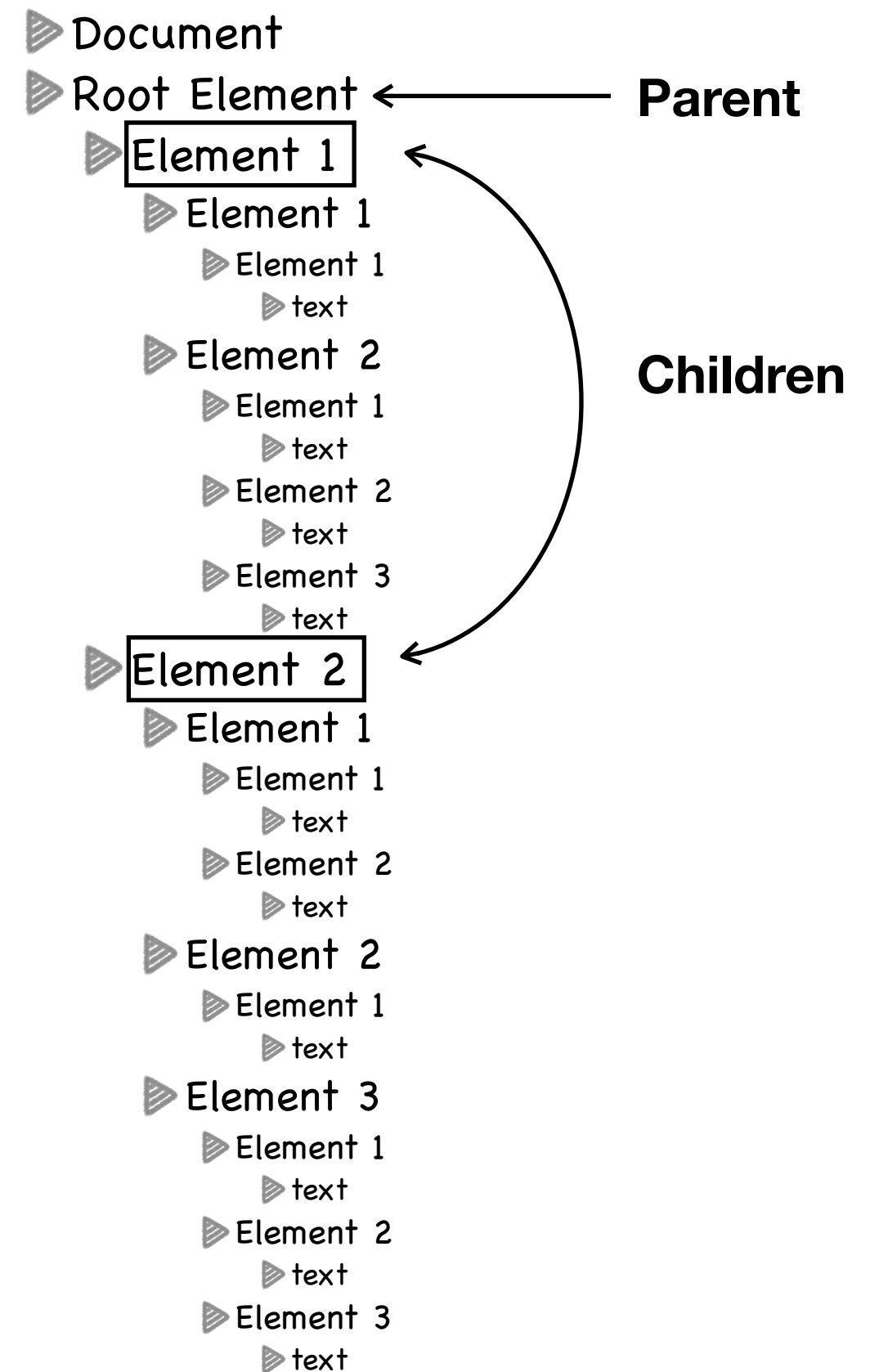
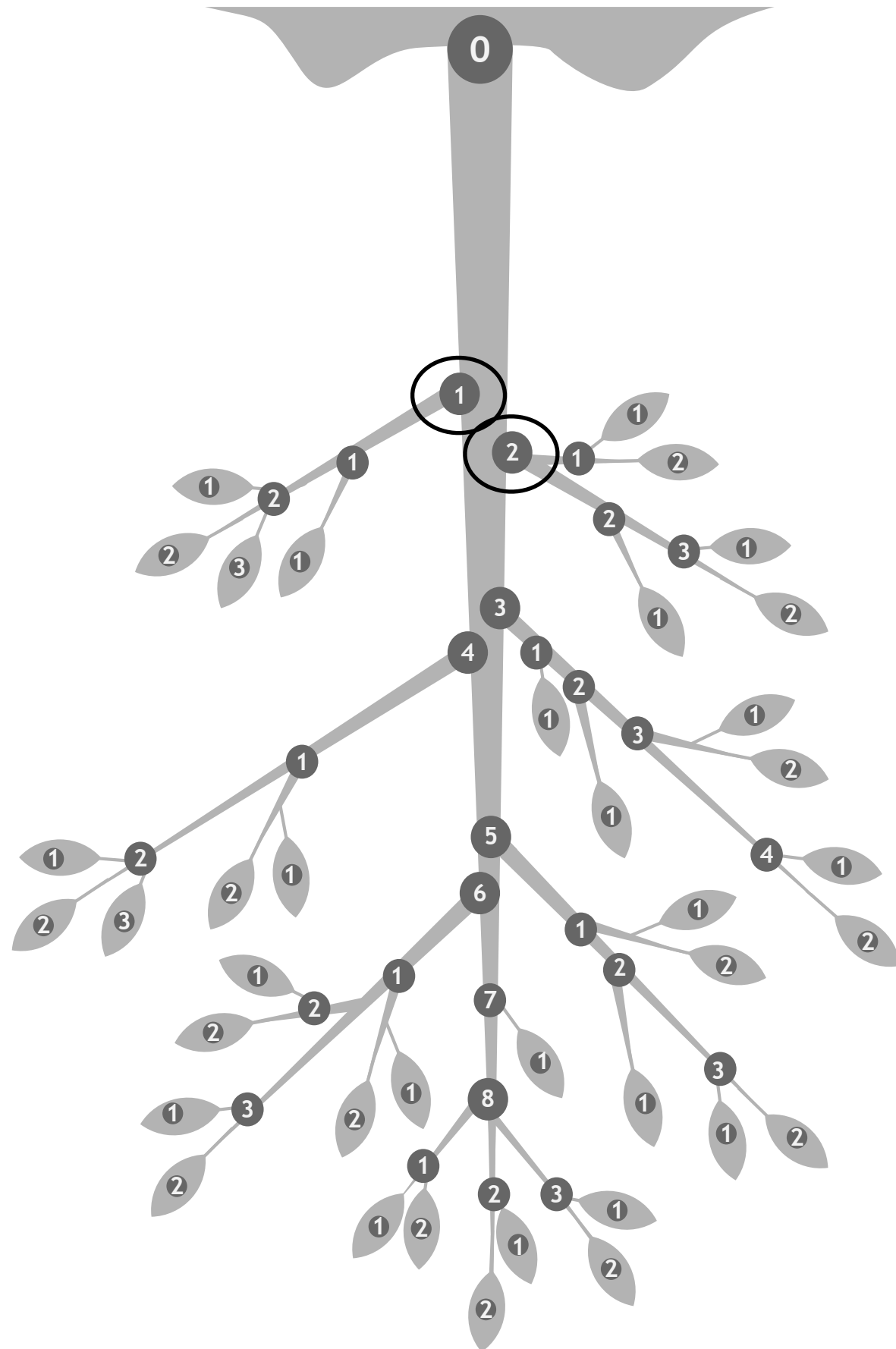
- ▶ Document
- ▶ Root Element
- ▶ **Element 1**
- ▶ Element 1
  - ▶ Element 1
    - ▶ text
  - ▶ Element 2
    - ▶ Element 1
      - ▶ text
    - ▶ Element 2
      - ▶ text
    - ▶ Element 3
      - ▶ text
- ▶ **Element 2**
- ▶ Element 1
  - ▶ Element 1
    - ▶ text
  - ▶ Element 2
    - ▶ text
- ▶ Element 2
  - ▶ Element 1
    - ▶ text
- ▶ Element 3
  - ▶ Element 1
    - ▶ text
  - ▶ Element 2
    - ▶ text
  - ▶ Element 3
    - ▶ text

# XML Node Tree



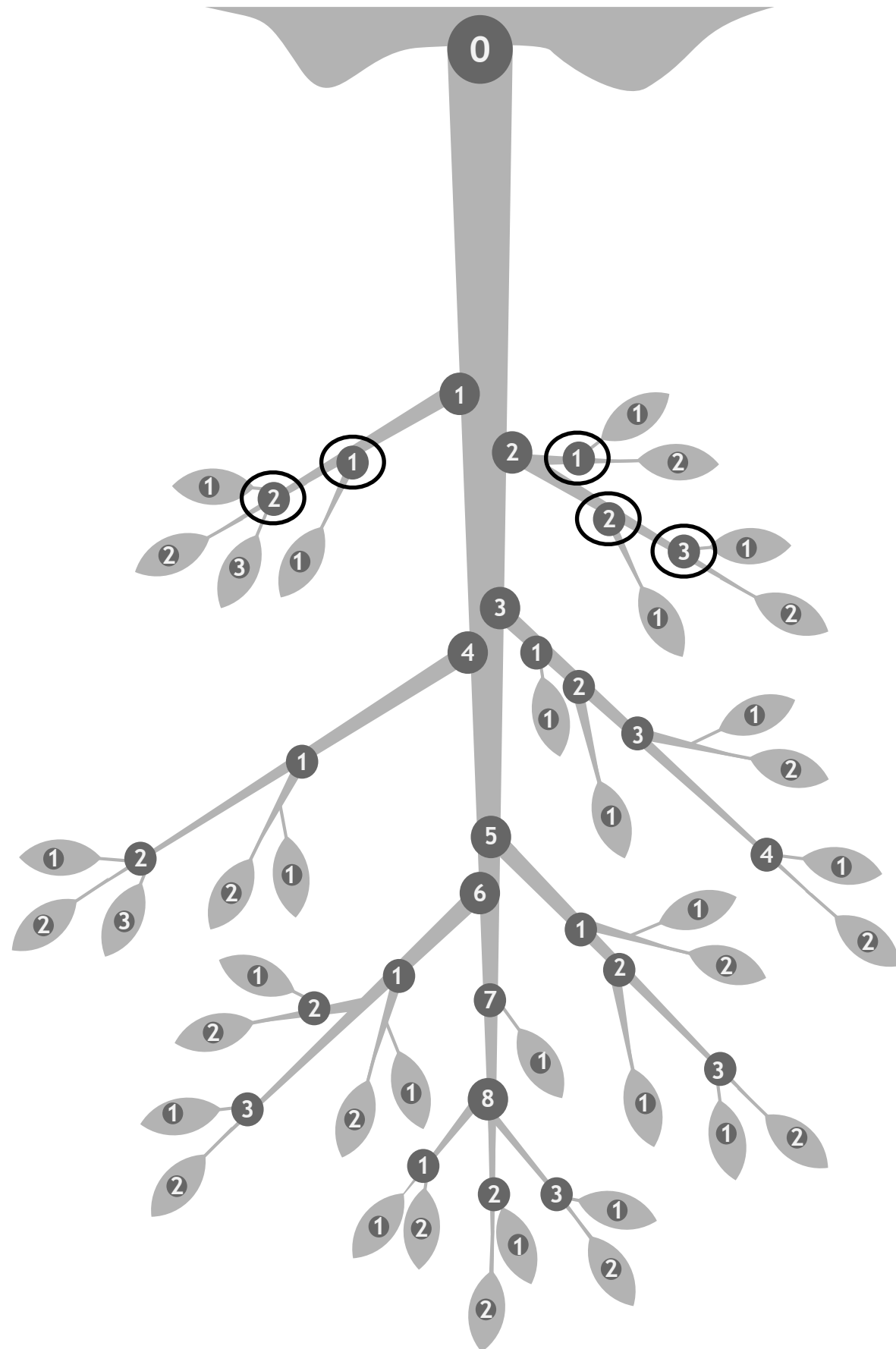
- ▶ Document
- ▶ Root Element ← **Parent**
- ▶ **Element 1**
  - ▶ Element 1
    - ▶ text
  - ▶ Element 2
    - ▶ Element 1
      - ▶ text
    - ▶ Element 2
      - ▶ text
    - ▶ Element 3
      - ▶ text
- ▶ **Element 2**
  - ▶ Element 1
    - ▶ Element 1
      - ▶ text
    - ▶ Element 2
      - ▶ text
  - ▶ Element 2
    - ▶ Element 1
      - ▶ text
  - ▶ Element 3
    - ▶ Element 1
      - ▶ text
    - ▶ Element 2
      - ▶ text
    - ▶ Element 3
      - ▶ text

# XML Node Tree

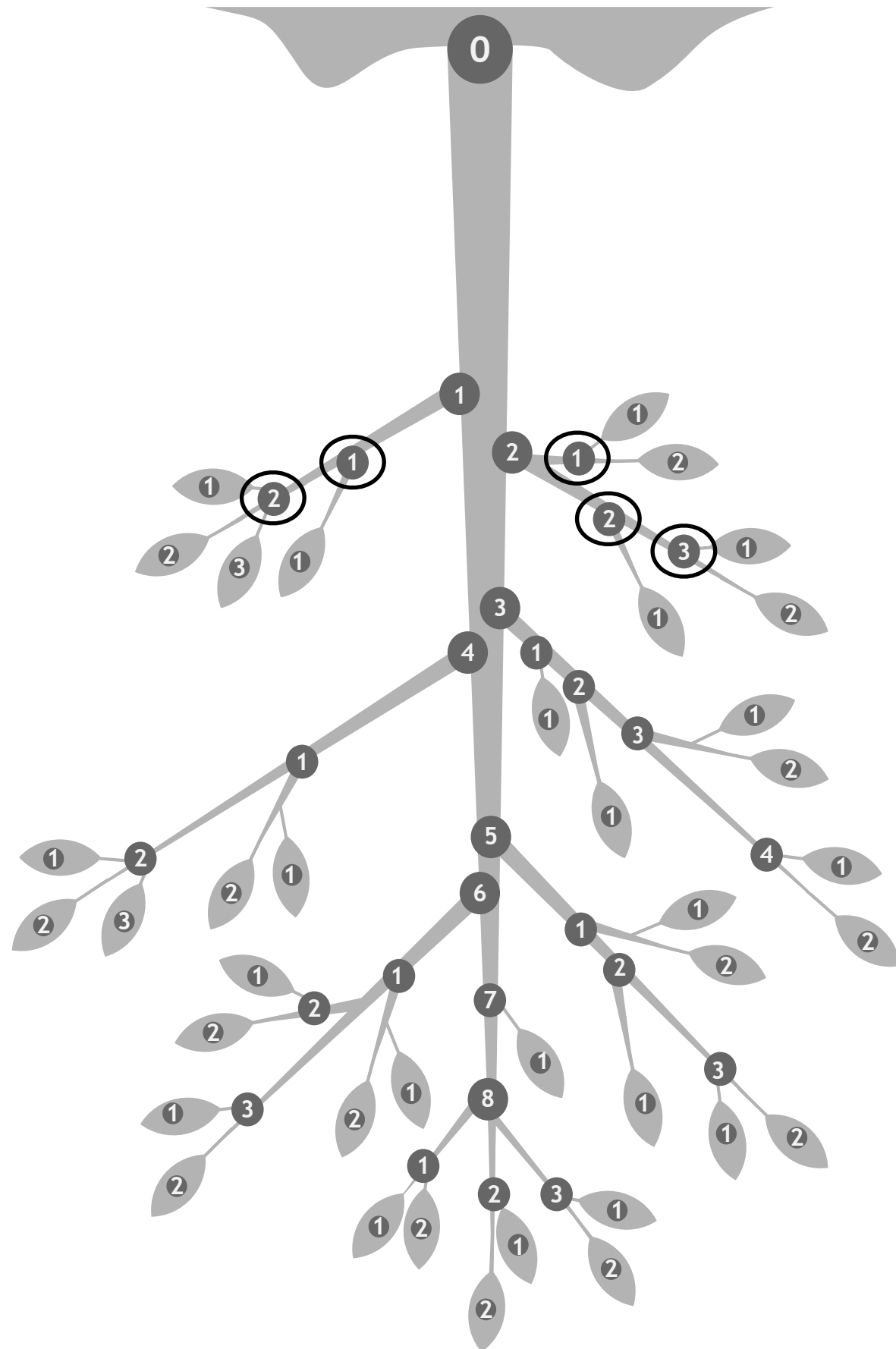




# XML Node Tree

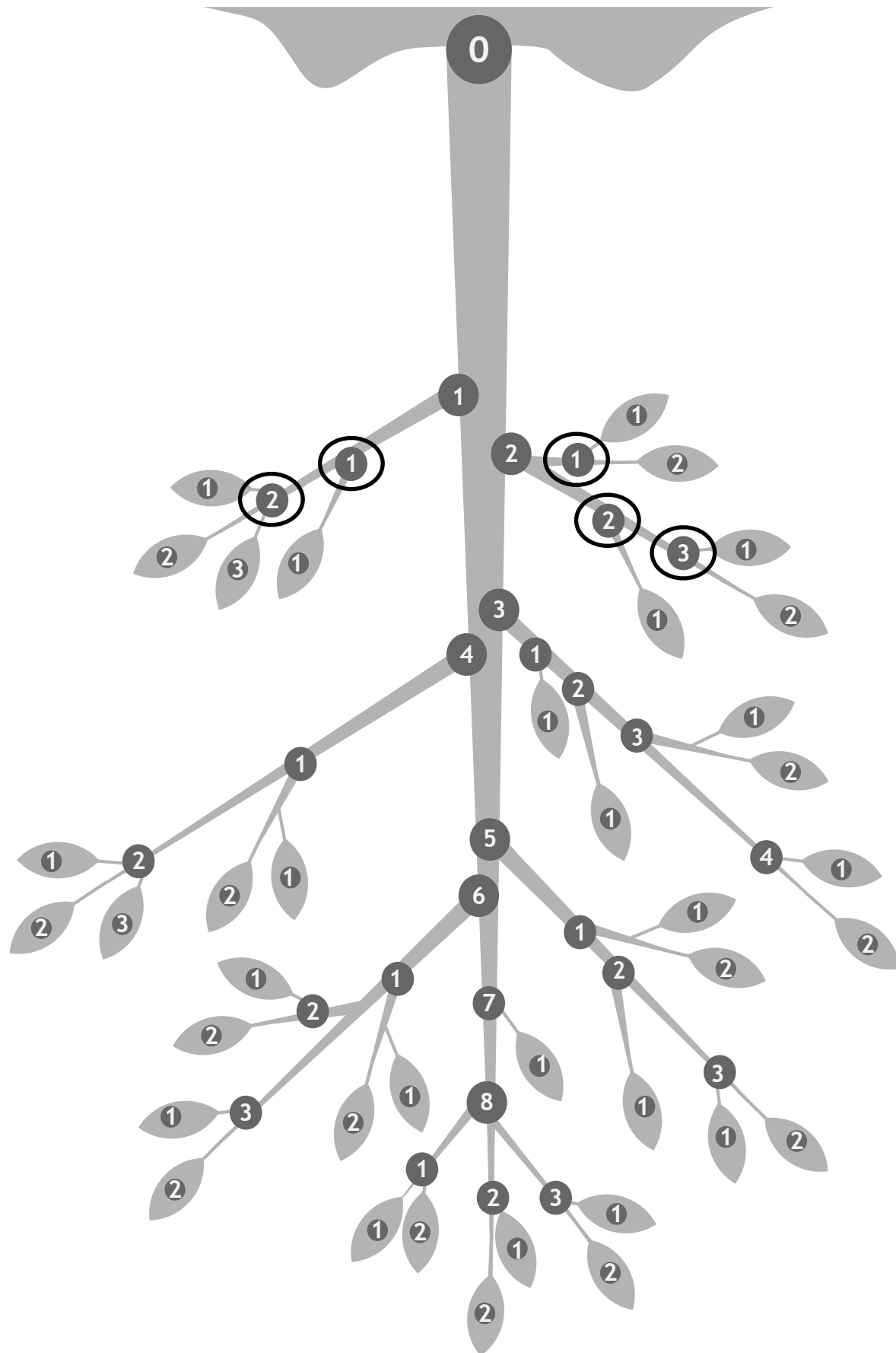


# XML Node Tree



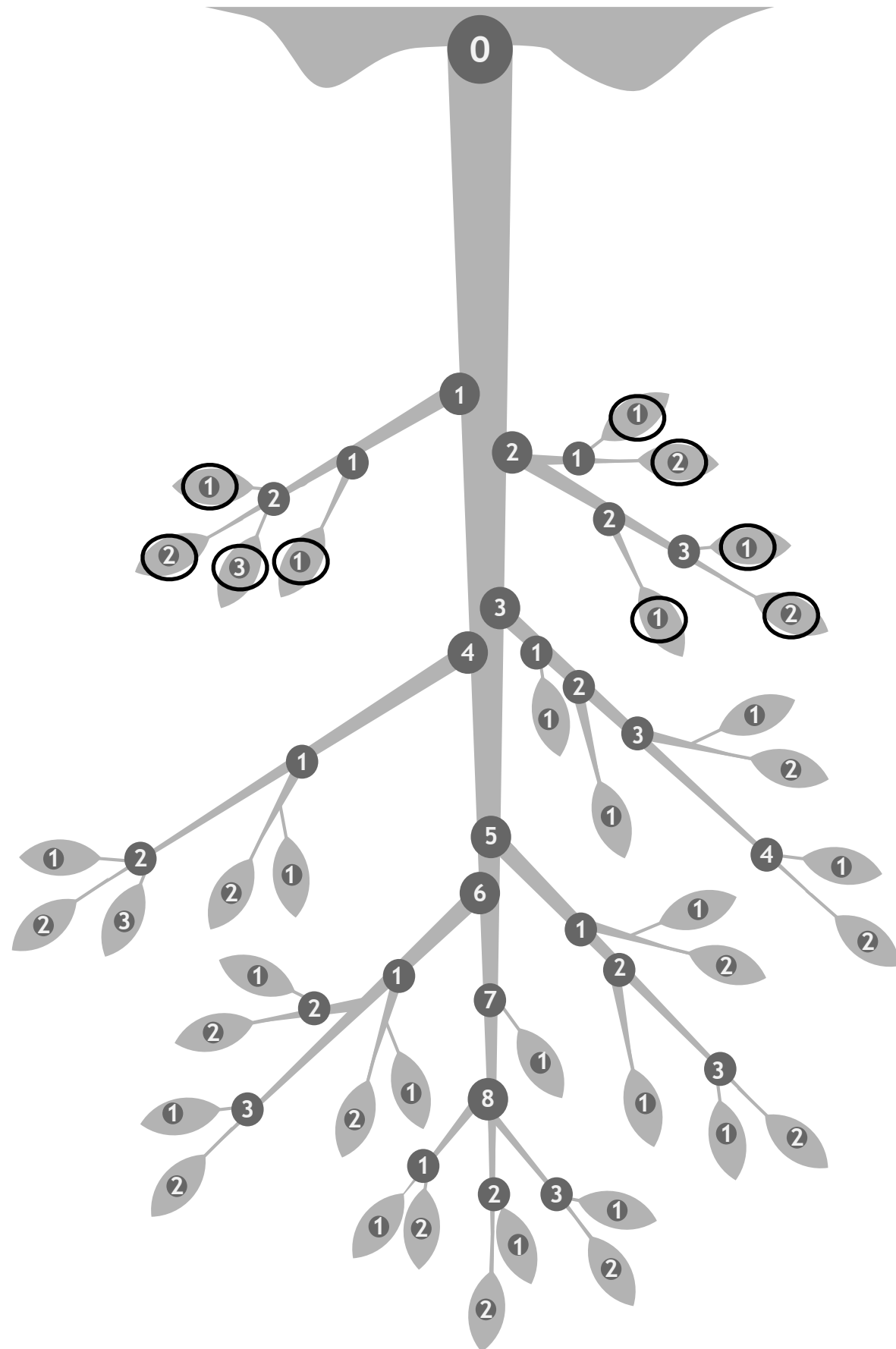
- ▶ Document
- ▶ Root Element
- ▶ Element 1 ← Parent
  - ▶ Element 1
    - ▶ Element 1
    - ▶ text
  - ▶ Element 2
    - ▶ Element 1
    - ▶ text
    - ▶ Element 2
    - ▶ text
    - ▶ Element 3
    - ▶ text
- ▶ Element 2 ← Parent
  - ▶ Element 1
    - ▶ Element 1
    - ▶ text
    - ▶ Element 2
    - ▶ text
  - ▶ Element 2
    - ▶ Element 1
    - ▶ text
  - ▶ Element 3
    - ▶ Element 1
    - ▶ text
    - ▶ Element 2
    - ▶ text
    - ▶ Element 3
    - ▶ text

# XML Node Tree



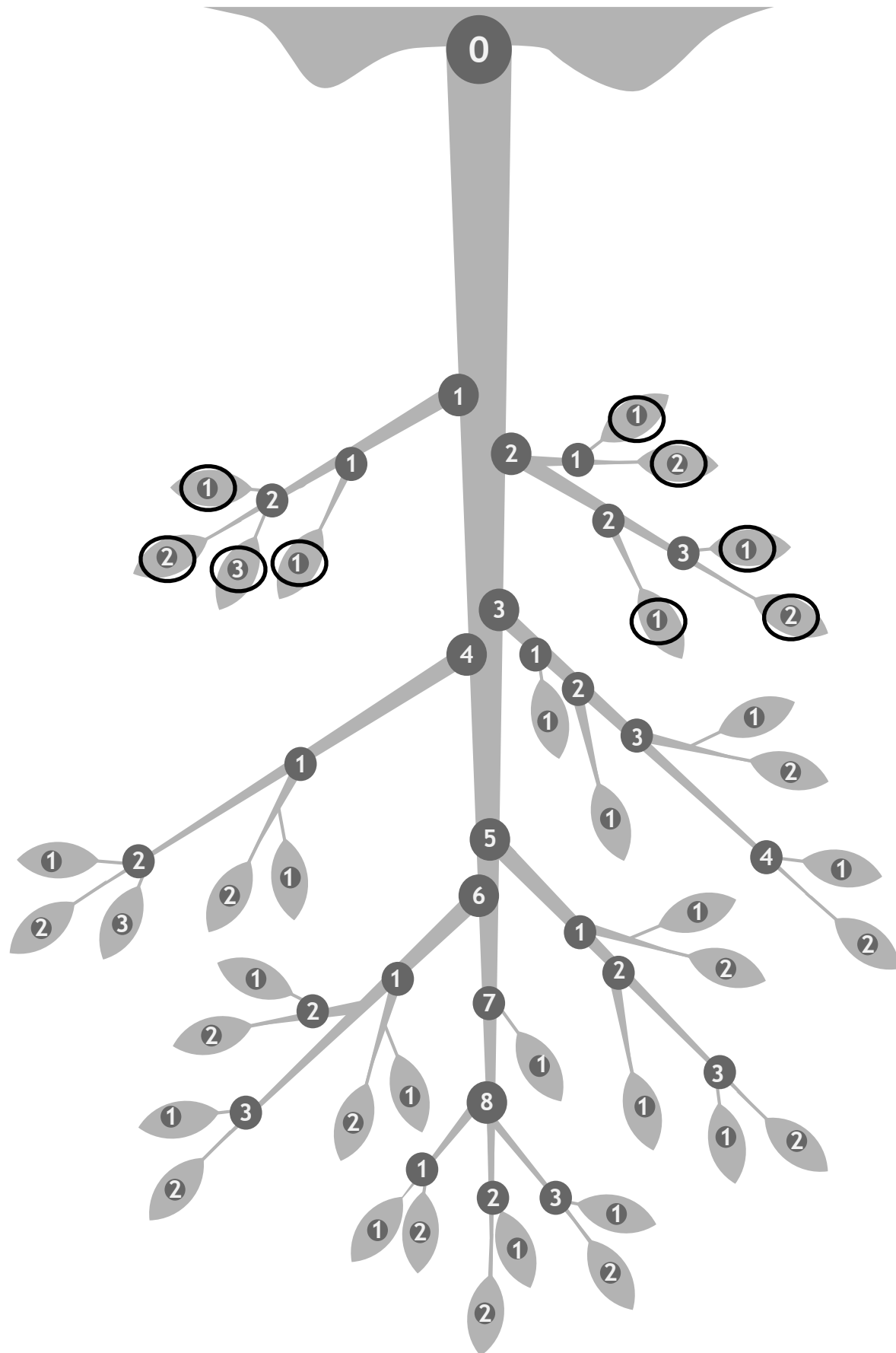
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- The diagram illustrates the relationship between a Document, Root Element, and their children in a hierarchical structure. It is divided into two main sections, each showing a different level of the hierarchy.
- Top Section:**
- Document** (indicated by a grey triangle icon) is the root of the hierarchy.
  - Root Element** (indicated by a grey triangle icon) is the first element in the hierarchy.
  - Element 1** (indicated by a grey triangle icon) is the first child of the Root Element.
  - Element 1** (indicated by a grey triangle icon) is the first child of Element 1.
  - Element 2** (indicated by a grey triangle icon) is the second child of Element 1.
  - Element 1** (indicated by a grey triangle icon) is the first child of Element 2.
  - Element 2** (indicated by a grey triangle icon) is the second child of Element 2.
  - Element 3** (indicated by a grey triangle icon) is the third child of Element 2.
- Bottom Section:**
- Element 2** (indicated by a grey triangle icon) is the root of this section.
  - Element 1** (indicated by a grey triangle icon) is the first child of Element 2.
  - Element 2** (indicated by a grey triangle icon) is the second child of Element 2.
  - Element 3** (indicated by a grey triangle icon) is the third child of Element 2.
  - Element 1** (indicated by a grey triangle icon) is the first child of Element 3.
  - Element 2** (indicated by a grey triangle icon) is the second child of Element 3.
  - Element 3** (indicated by a grey triangle icon) is the third child of Element 3.
- Relationships:**
- Parent** (indicated by a straight arrow) points from the Root Element to Element 1 in the top section, and from Element 2 to Element 1 in the bottom section.
  - Children** (indicated by a curved arrow) points from Element 1 to Element 2 in the top section, and from Element 2 to Element 3 in the bottom section.

# XML Node Tree



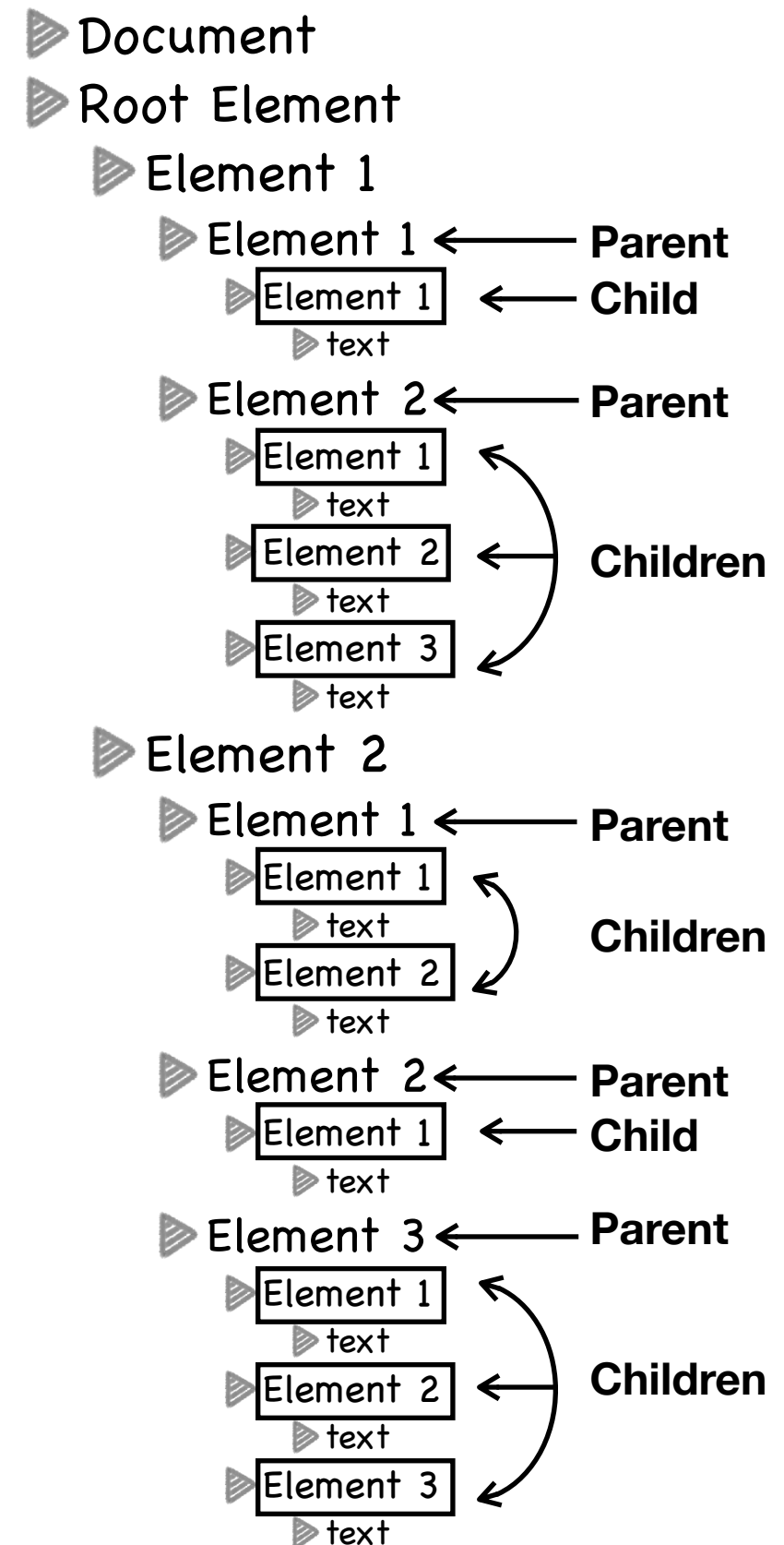
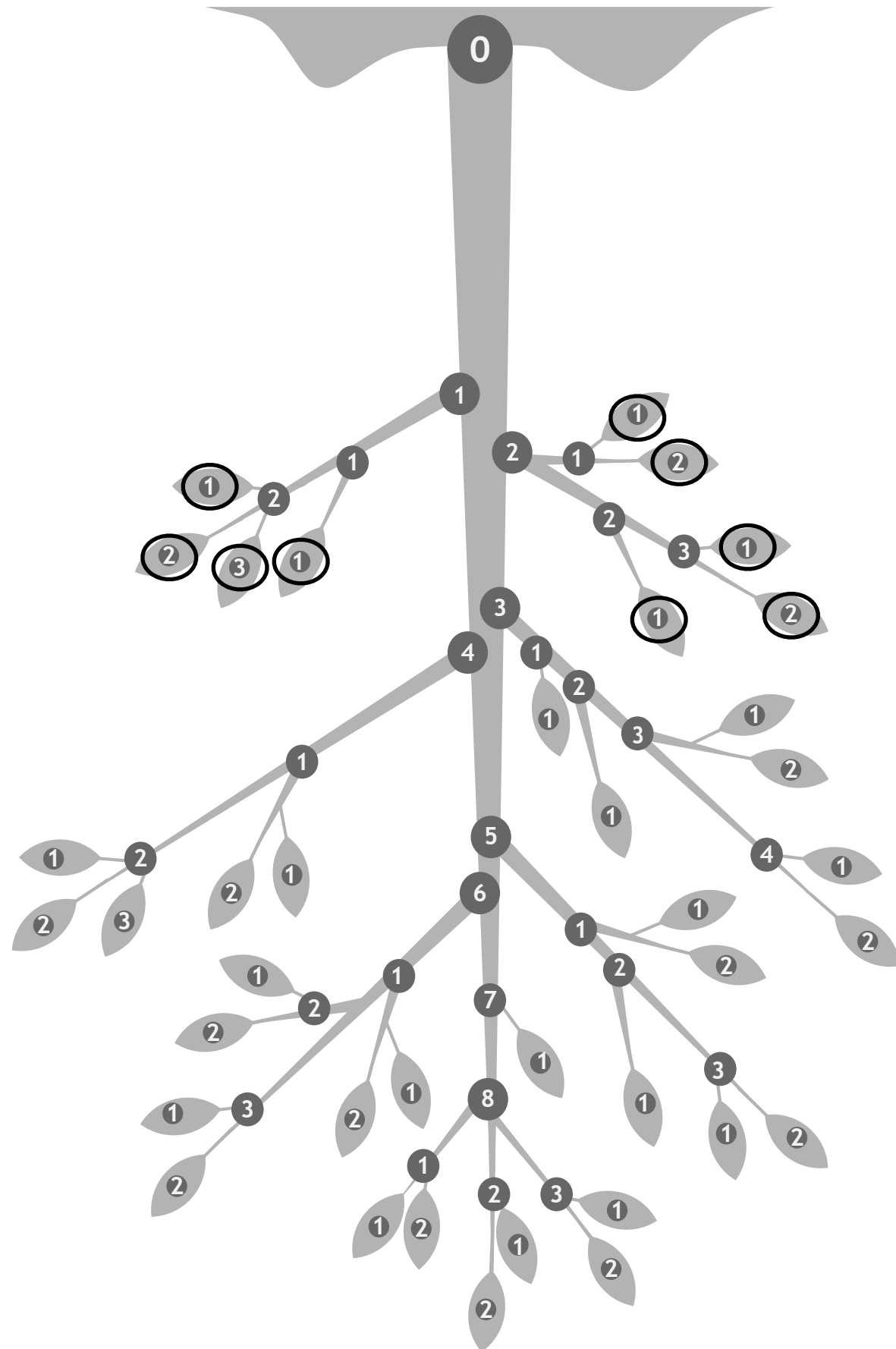
- ▶ Document
- ▶ Root Element
  - ▶ Element 1
    - ▶ Element 1
      - ▶ text
  - ▶ Element 2
    - ▶ Element 1
      - ▶ text
    - ▶ Element 2
      - ▶ text
    - ▶ Element 3
      - ▶ text
- ▶ Element 2
  - ▶ Element 1
    - ▶ Element 1
      - ▶ text
    - ▶ Element 2
      - ▶ text
  - ▶ Element 2
    - ▶ Element 1
      - ▶ text
  - ▶ Element 3
    - ▶ Element 1
      - ▶ text
    - ▶ Element 2
      - ▶ text
    - ▶ Element 3
      - ▶ text

# XML Node Tree

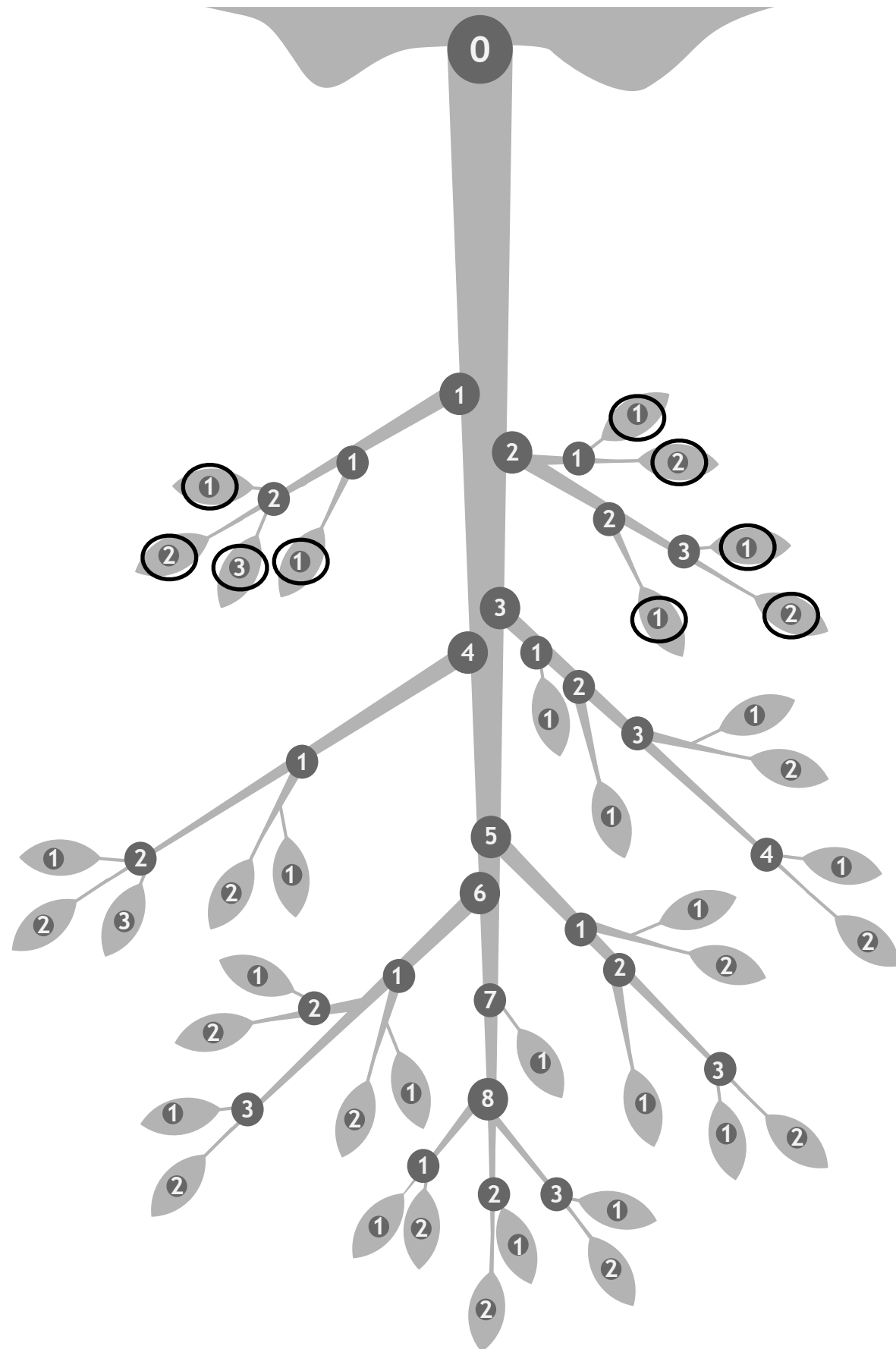


- ▶ Document
  - ▶ Root Element
    - ▶ Element 1
      - ▶ Element 1 ← Parent
        - ▶ Element 1
          - ▶ text
      - ▶ Element 2 ← Parent
        - ▶ Element 1
          - ▶ text
        - ▶ Element 2
          - ▶ text
        - ▶ Element 3
          - ▶ text
    - ▶ Element 2
      - ▶ Element 1 ← Parent
        - ▶ Element 1
          - ▶ text
        - ▶ Element 2
          - ▶ text
      - ▶ Element 2 ← Parent
        - ▶ Element 1
          - ▶ text
      - ▶ Element 3 ← Parent
        - ▶ Element 1
          - ▶ text
        - ▶ Element 2
          - ▶ text
        - ▶ Element 3
          - ▶ text

# XML Node Tree



# XML Node Tree



▶ Document

▶ Root Element

▶ Element 1

▶ Element 1 ← Parent

▶ Element 1 ← Child  
▶ text

▶ Element 2 ← Parent

▶ Element 1 ← Siblings  
▶ text  
▶ Element 2 ← Siblings  
▶ text  
▶ Element 3 ← Siblings  
▶ text

▶ Element 2

▶ Element 1 ← Parent

▶ Element 1 ← Siblings  
▶ text  
▶ Element 2 ← Siblings  
▶ text

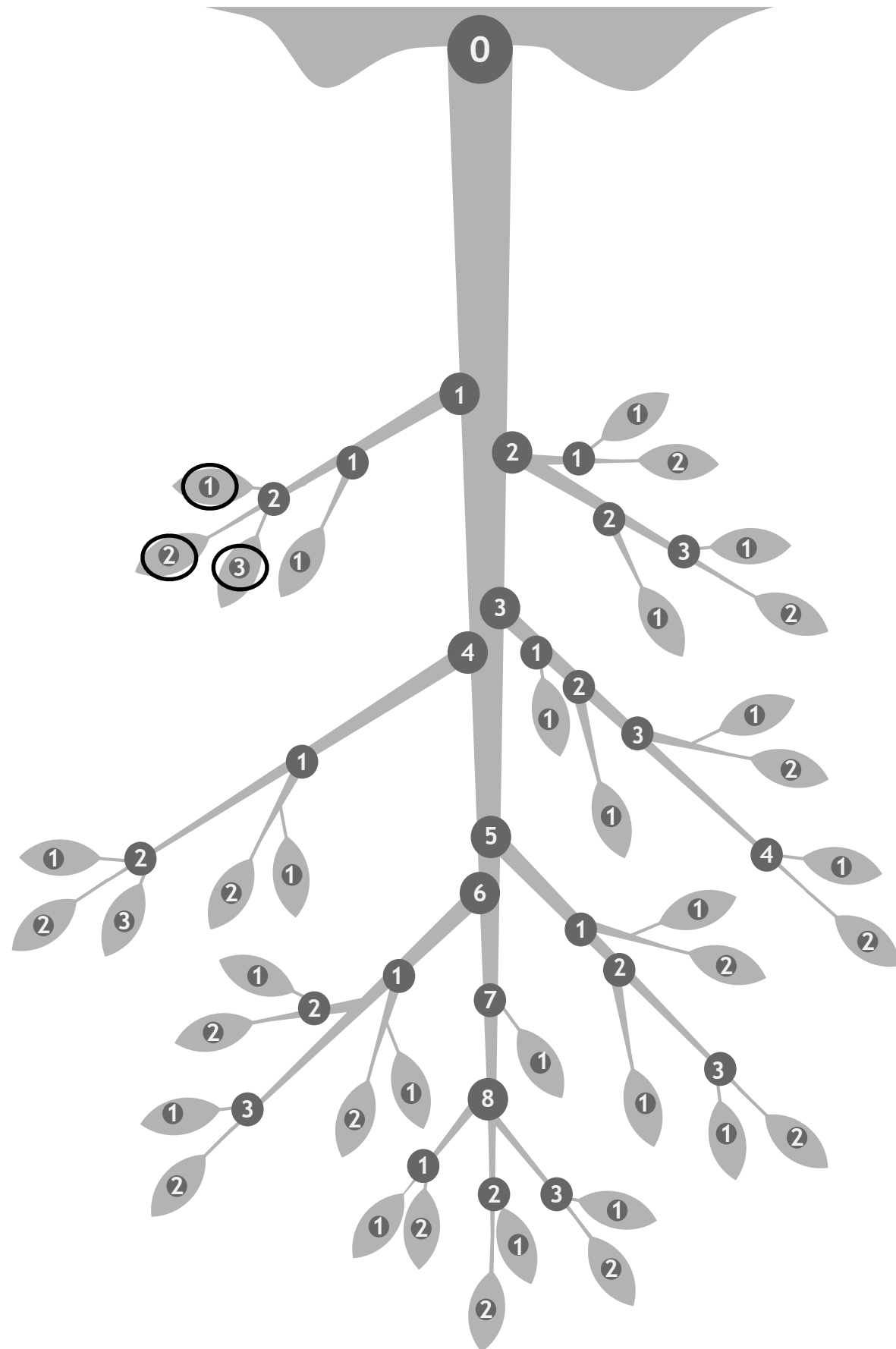
▶ Element 2 ← Parent

▶ Element 1 ← Child  
▶ text

▶ Element 3 ← Parent

▶ Element 1 ← Siblings  
▶ text  
▶ Element 2 ← Siblings  
▶ text  
▶ Element 3 ← Siblings  
▶ text

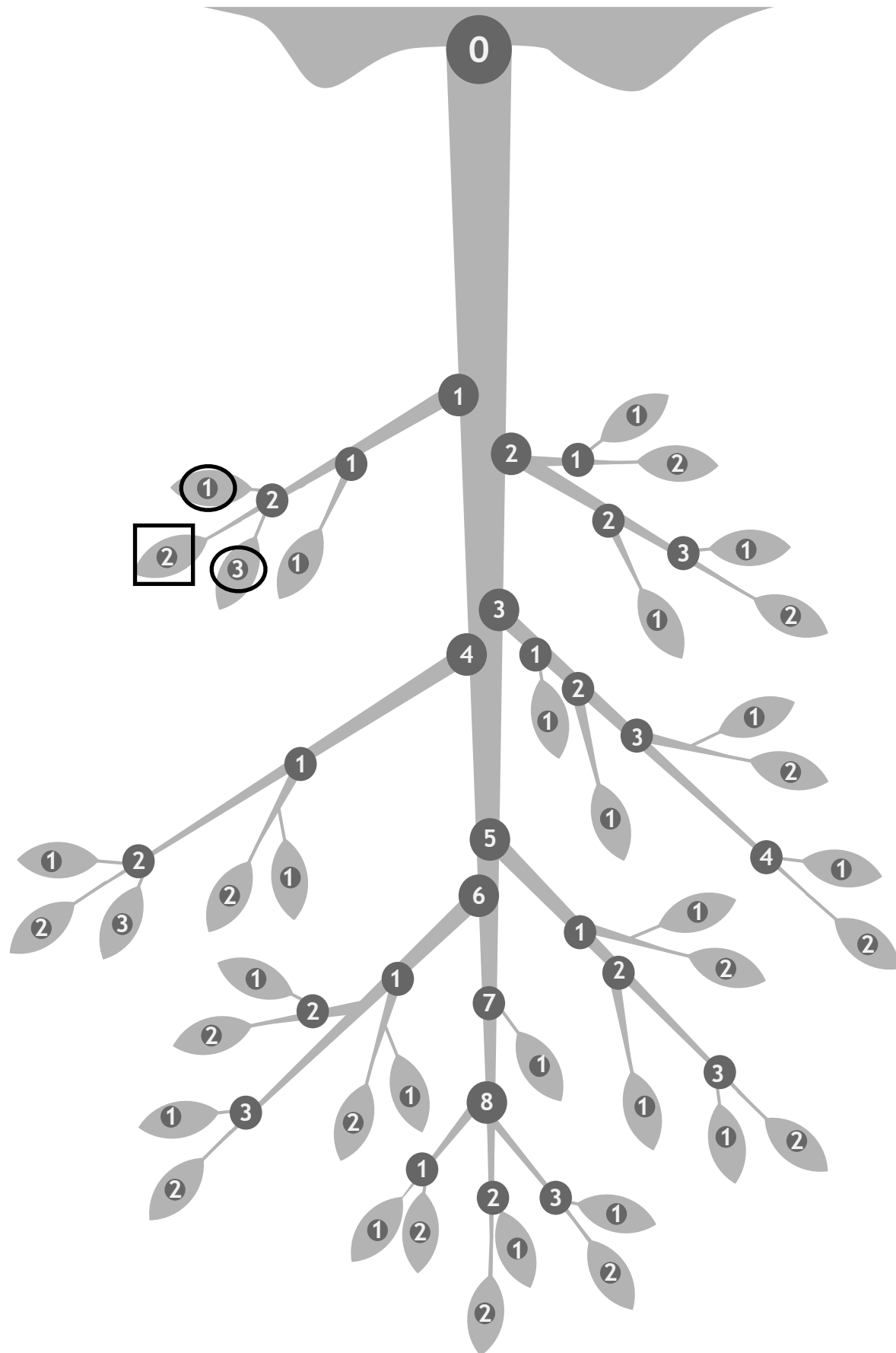
# XML Node Tree



- ▶ Document
- ▶ Root Element
- ▶ Element 1
  - ▶ Element 1
    - ▶ Element 1
      - ▶ text
    - ▶ Element 2 ← **Parent**
      - ▶ Element 1
        - ▶ text
      - ▶ Element 2 ← **Siblings**
        - ▶ Element 3
          - ▶ text
- ▶ Element 2
  - ▶ Element 1
    - ▶ Element 1
      - ▶ text
    - ▶ Element 2
      - ▶ text
  - ▶ Element 2
    - ▶ Element 1
      - ▶ text
  - ▶ Element 3
    - ▶ Element 1
      - ▶ text
    - ▶ Element 2
      - ▶ text
    - ▶ Element 3
      - ▶ text

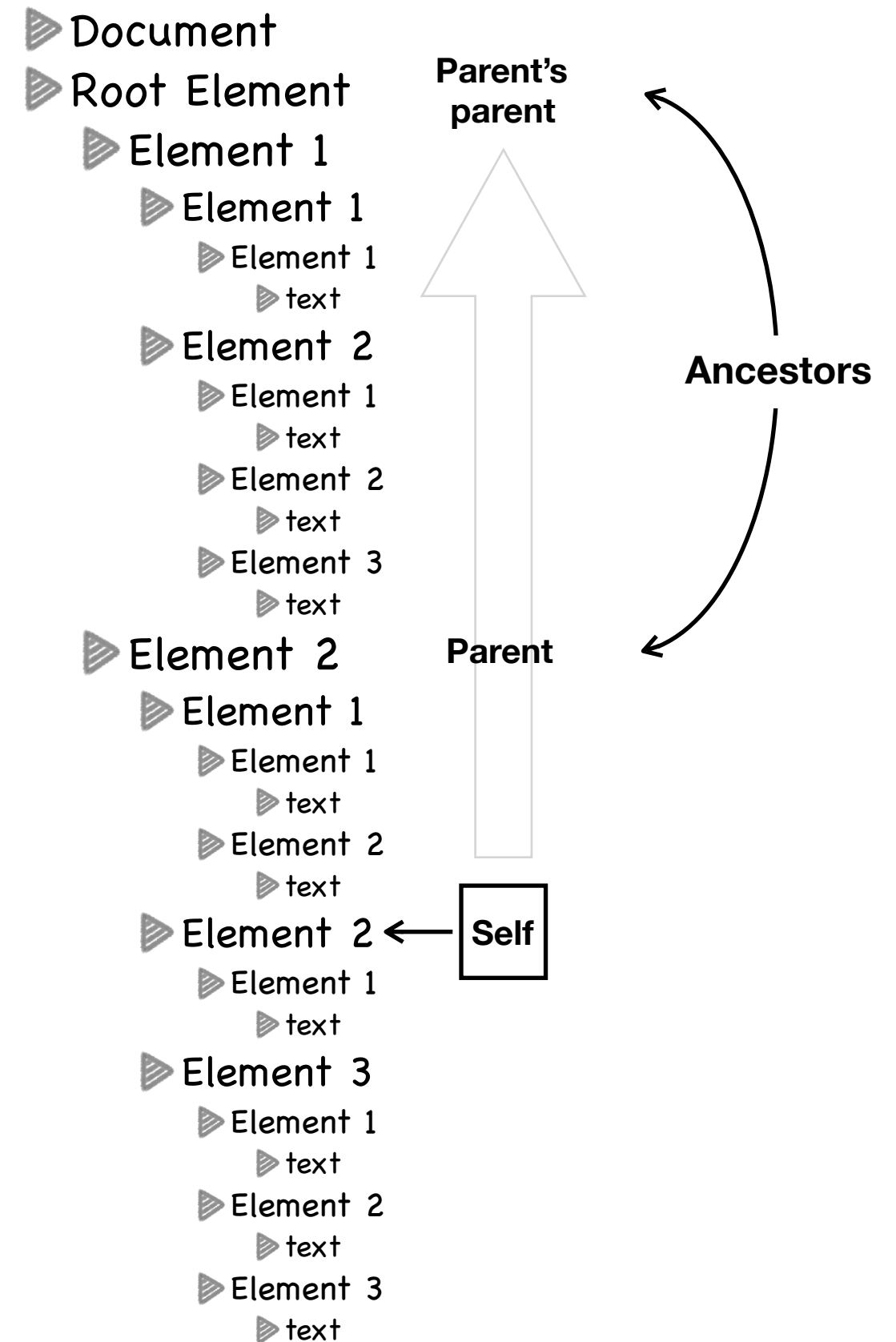
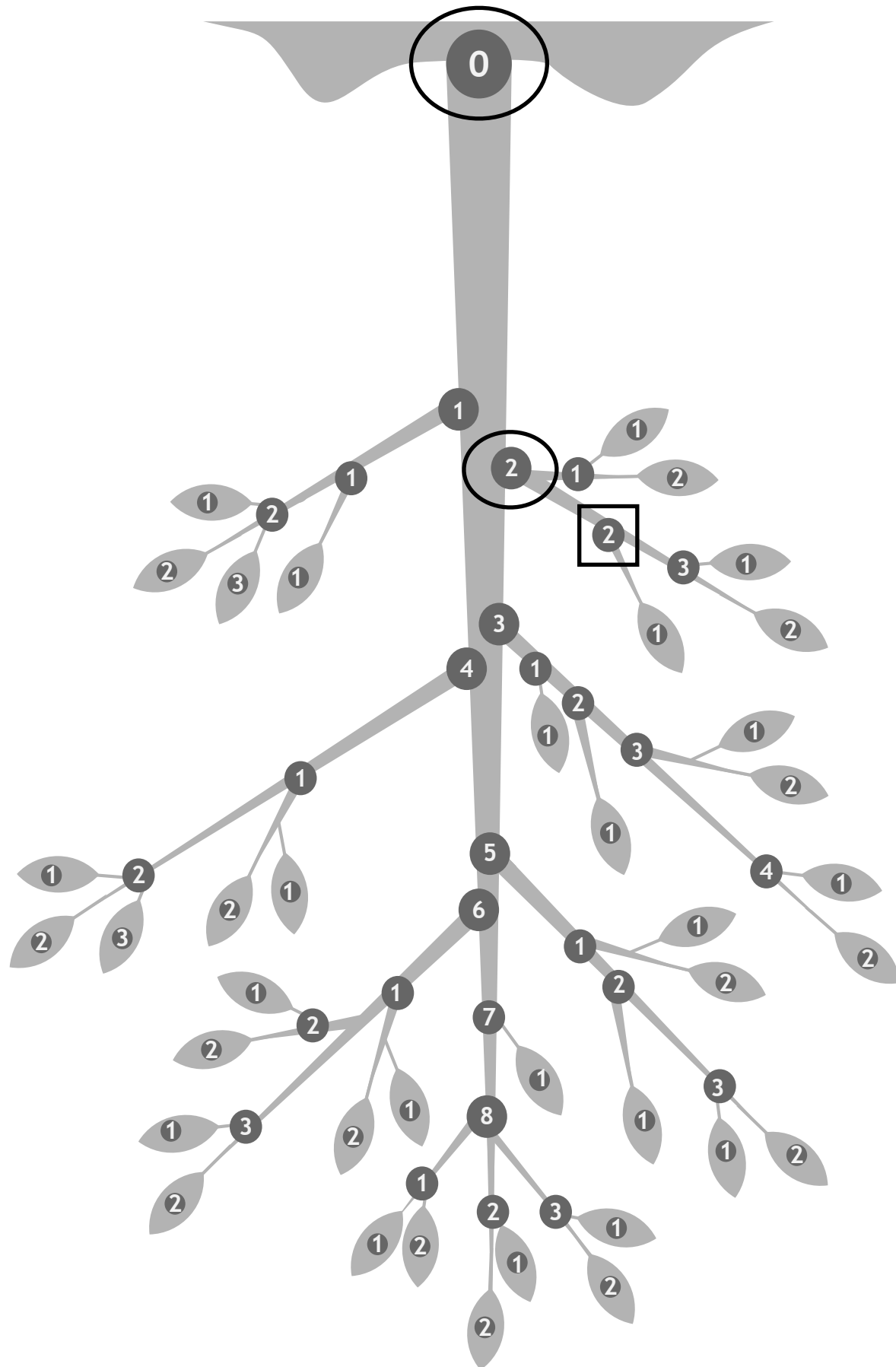


# XML Node Tree

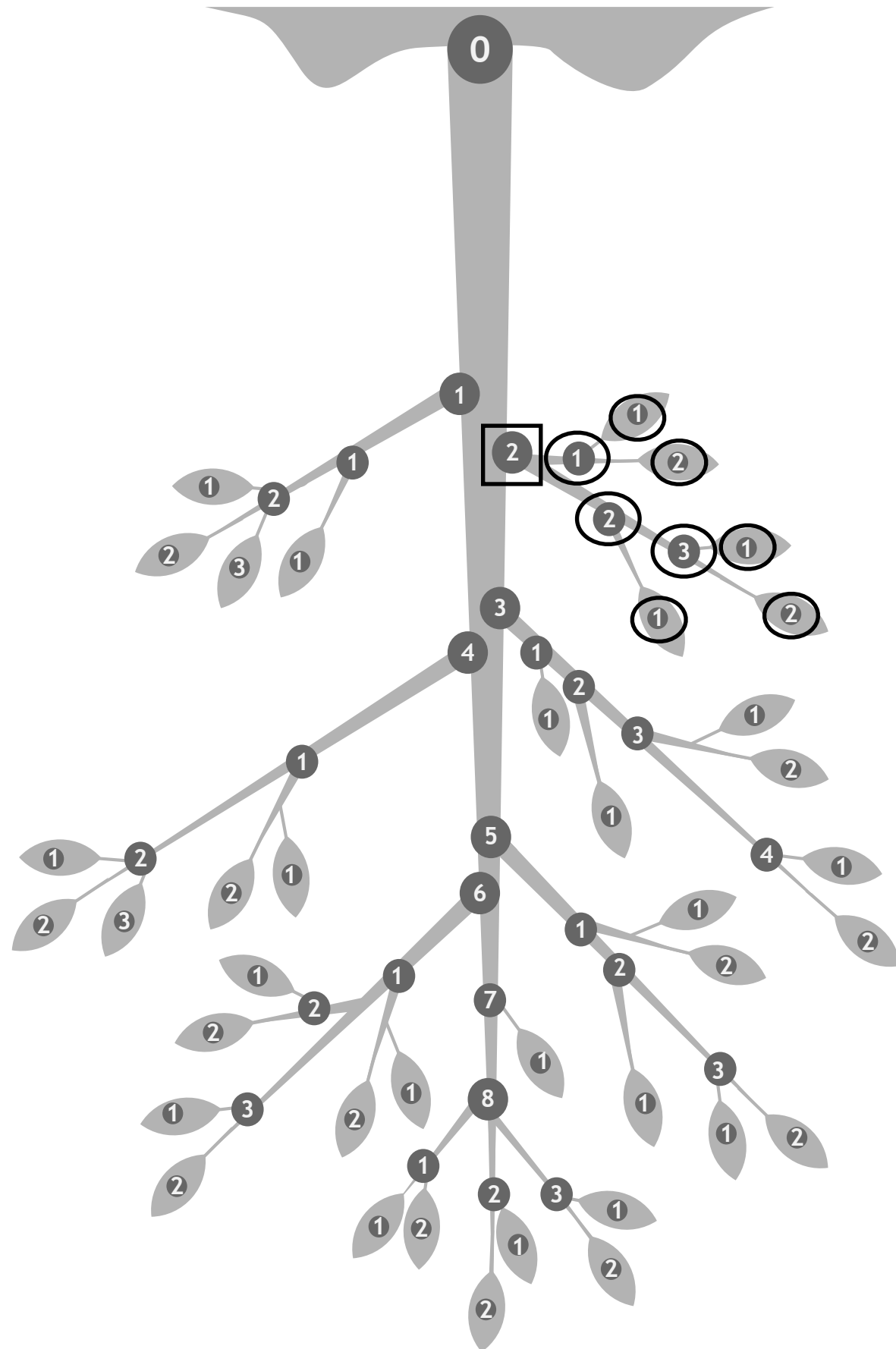


- 
- The diagram illustrates an XML tree structure with the following hierarchy:
- Document
    - Root Element
      - Element 1
        - Element 1
          - Element 1
            - text
        - Element 2
          - Element 1
            - text
          - Element 2
            - text
          - Element 3
            - text
      - Element 2
        - Element 1
          - Element 1
            - text
          - Element 2
            - text
        - Element 2
          - Element 1
            - text
        - Element 3
          - Element 1
            - text
          - Element 2
            - text
          - Element 3
            - text
- Annotations and relationships:
- A box labeled **Self** is positioned to the right of the tree.
  - An arrow points from the **Self** box to the **Element 2** child of the first **Element 1** (under the first **Root Element**), with the label **preceeding-sibling** above the arrow.
  - Another arrow points from the **Self** box to the **Element 2** child of the second **Element 1** (under the first **Root Element**), with the label **following-sibling** below the arrow.

# XML Node Tree



# XML Node Tree



- ▶ Document
- ▶ Root Element
- ▶ Element 1

- ▶ Element 1
  - ▶ Element 1
    - ▶ text

- ▶ Element 2
  - ▶ Element 1
    - ▶ text
  - ▶ Element 2
    - ▶ text
  - ▶ Element 3
    - ▶ text

- ▶ Element 2 ← **Self**
  - Child
    - Child's Child
      - ▶ Element 1
        - ▶ text
      - ▶ Element 2
        - ▶ text
    - Child
      - Child's Child
        - ▶ Element 1
          - ▶ text
        - ▶ Element 2
          - ▶ text
        - ▶ Element 3
          - ▶ text

Decendants

# XML Node Bush

