

# Concurrent Markup for XML Documents

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# Introduction

- **Background:** biblical texts  
*complex textual transmission*  
*multi-level analyses*

- **Previous Insights (Durusau & O'Donnell 2001):**
  - > Markup is *metadata about PCDATA*
  - > Typically recorded *in-line* utilizing a *tree* notation
  - > Metadata can be recorded *on* each PCDATA item instead of *around* it (BUVH)

# Outline

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## **(1) Concurrent Markup Revisited:**

A Partial Typology for Overlapping Hierarchies

## **(2) Testing the BUVH Model**

Milton's *Paradise Lost*

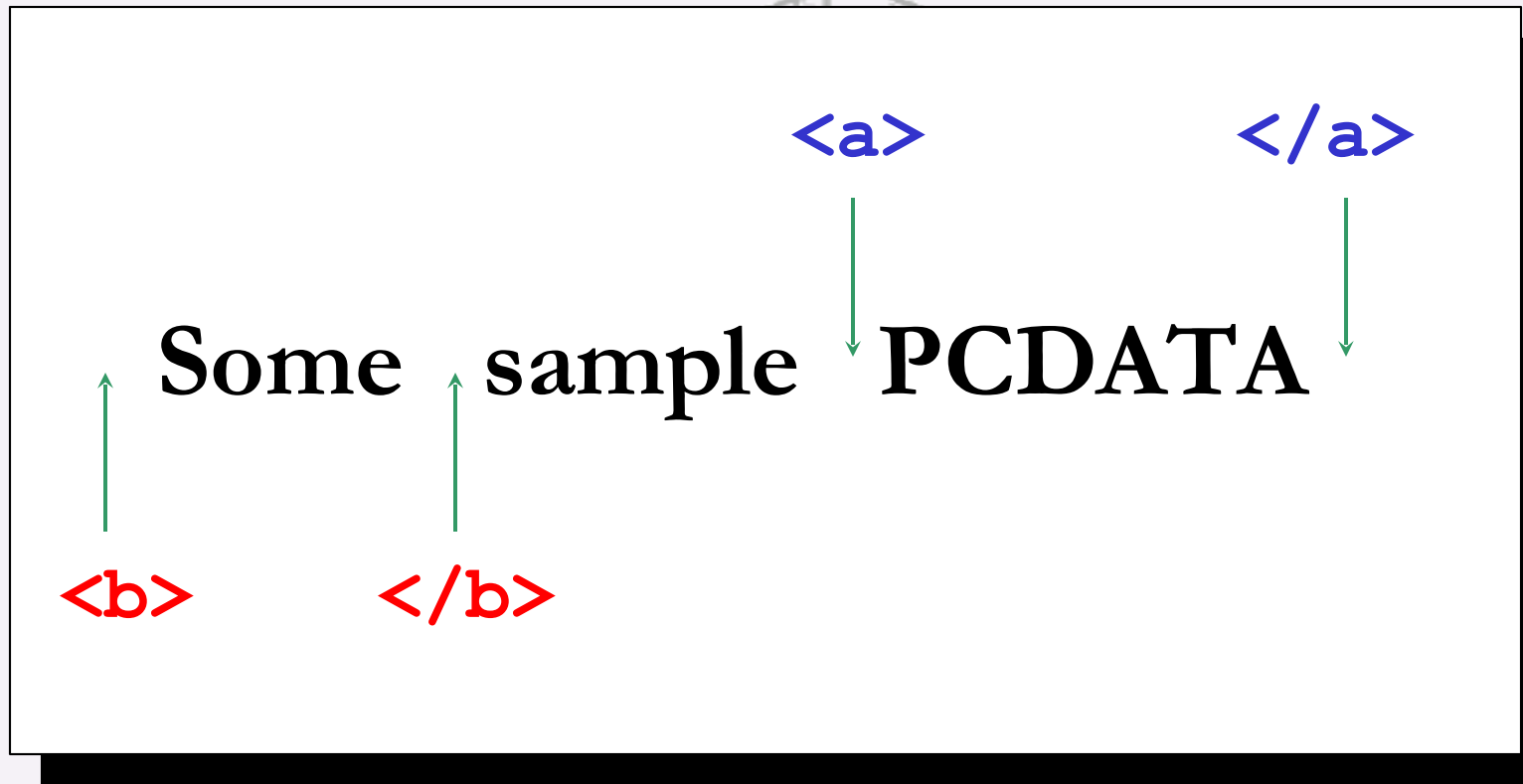
## **(3) 'Down from the trees':**

Future Investigations

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# Overlapping Hierarchies

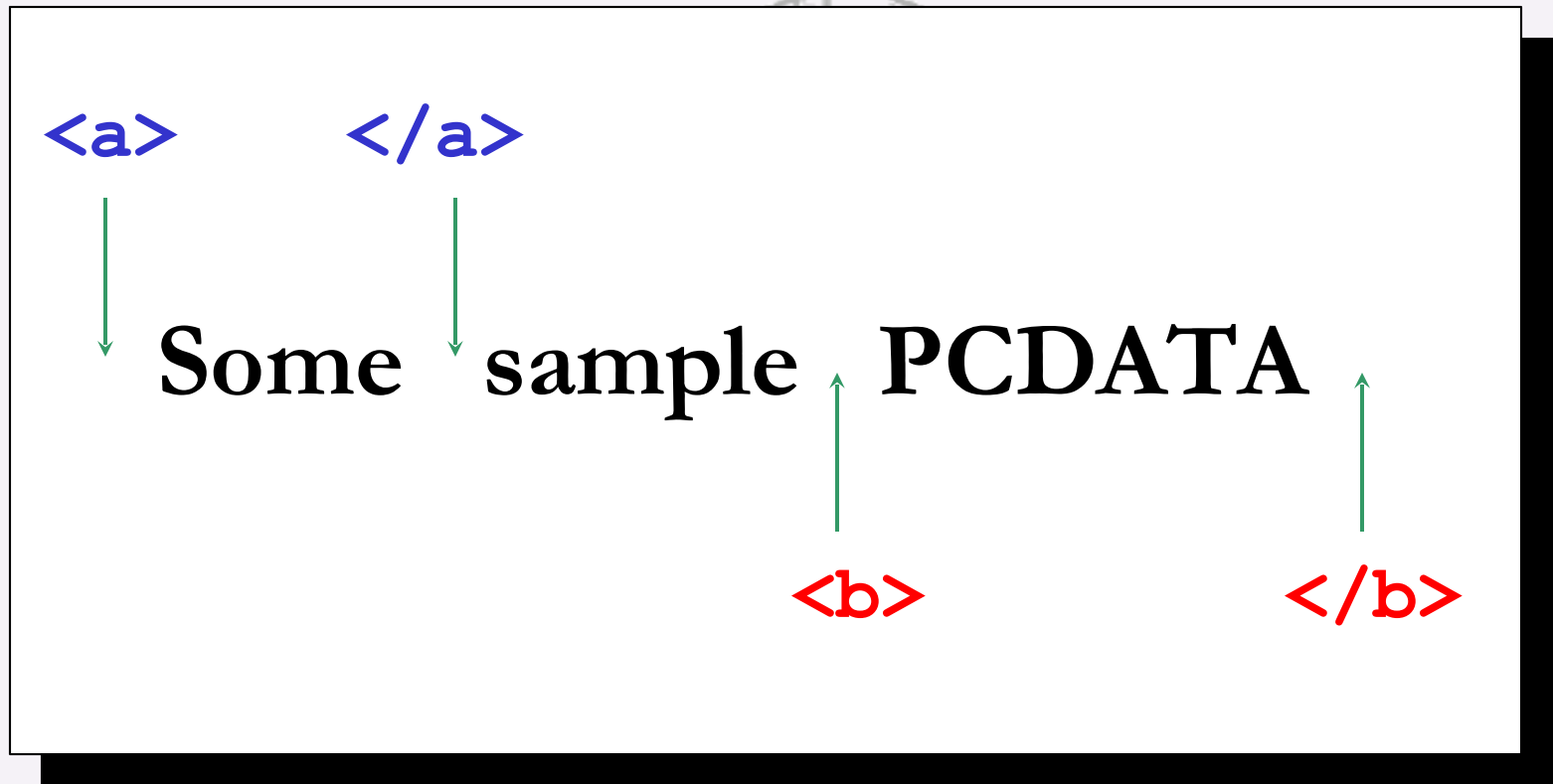
## Case 1: No-overlap



</text>

# Overlapping Hierarchies

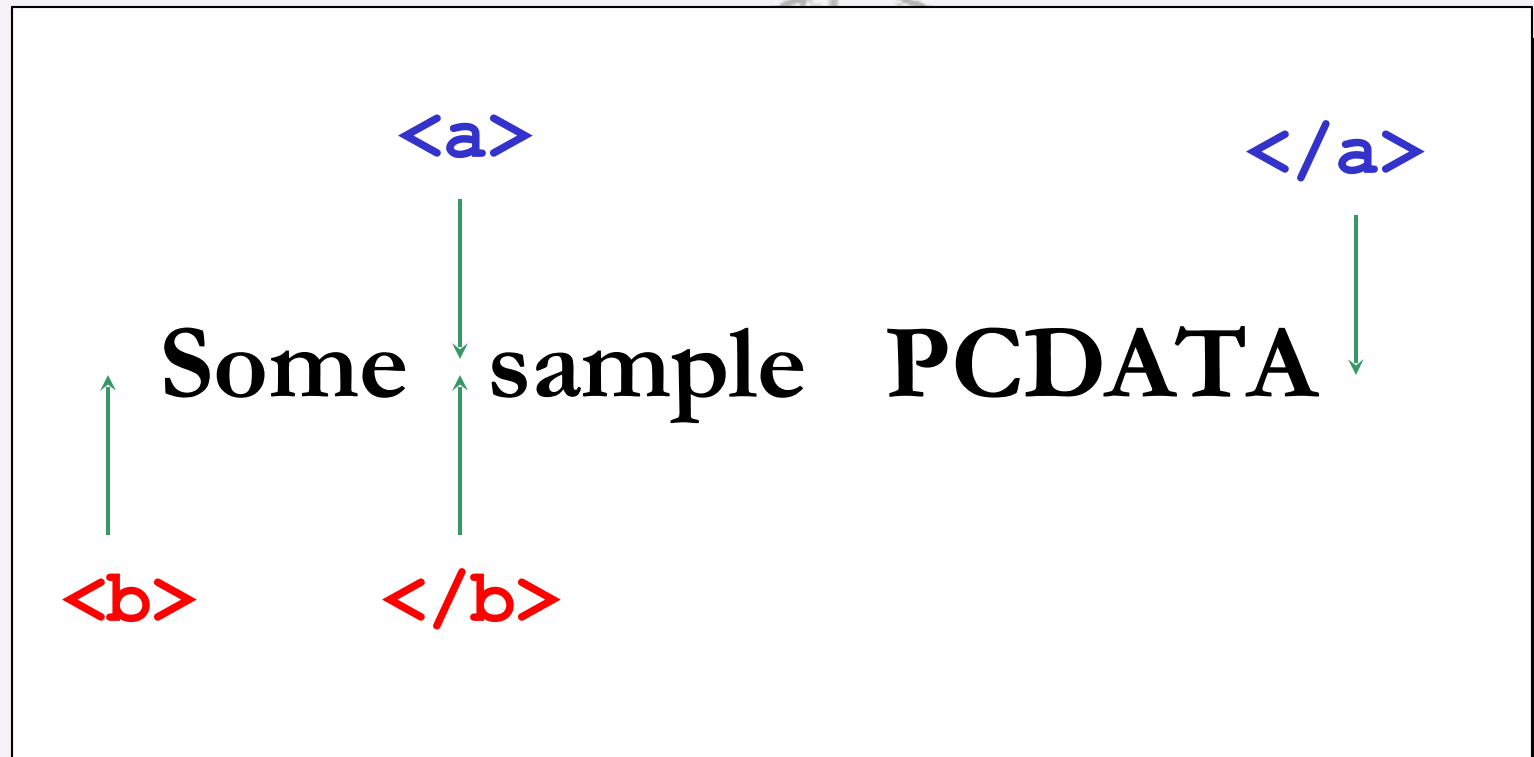
## Case 13: No-overlap



`</text>`

# Overlapping Hierarchies

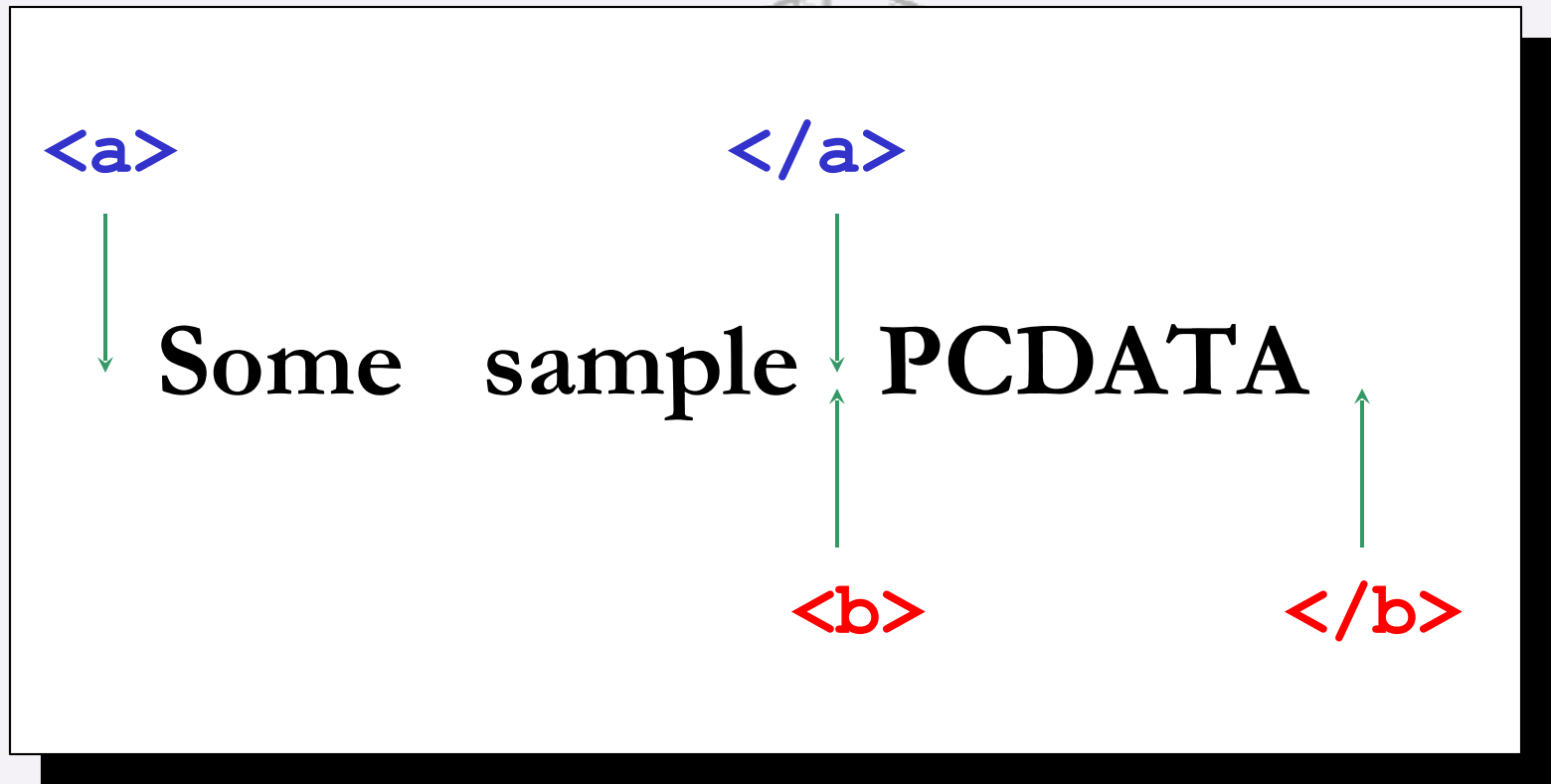
## Case 2: Shared start/end point



</text>

# Overlapping Hierarchies

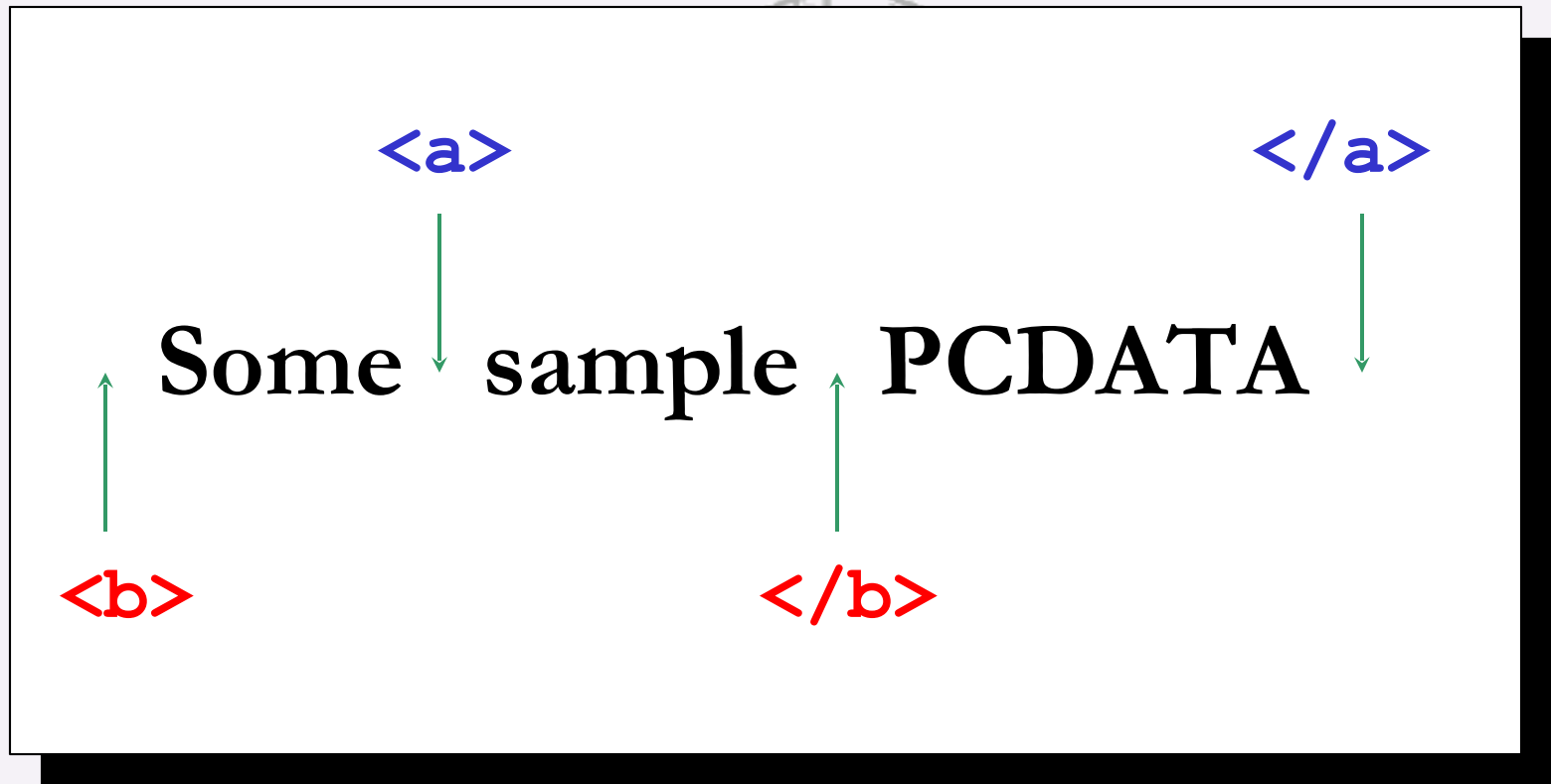
## Case 12: Shared end/start point



`</text>`

# Overlapping Hierarchies

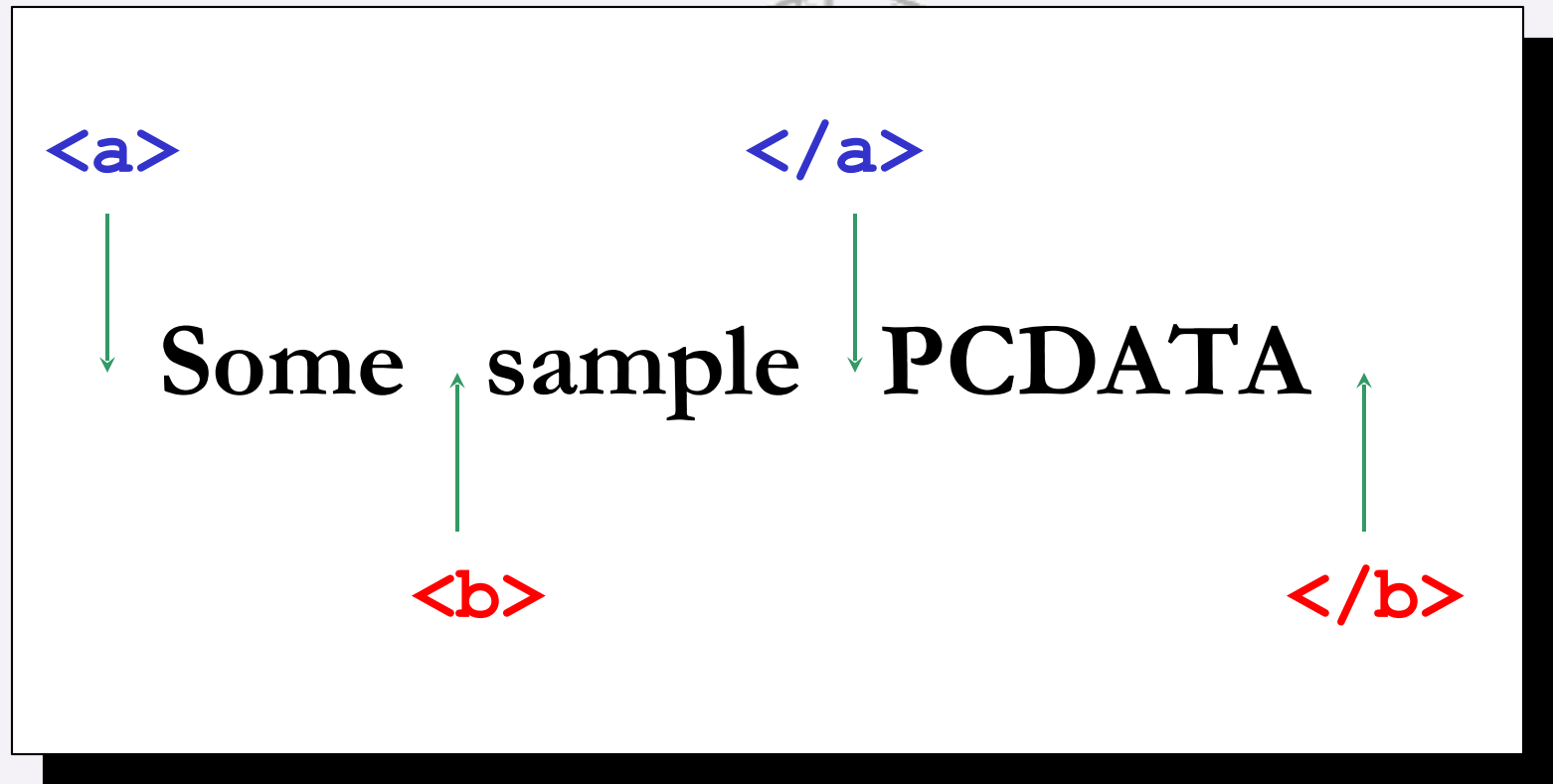
## Case 3: 'Classic' overlap





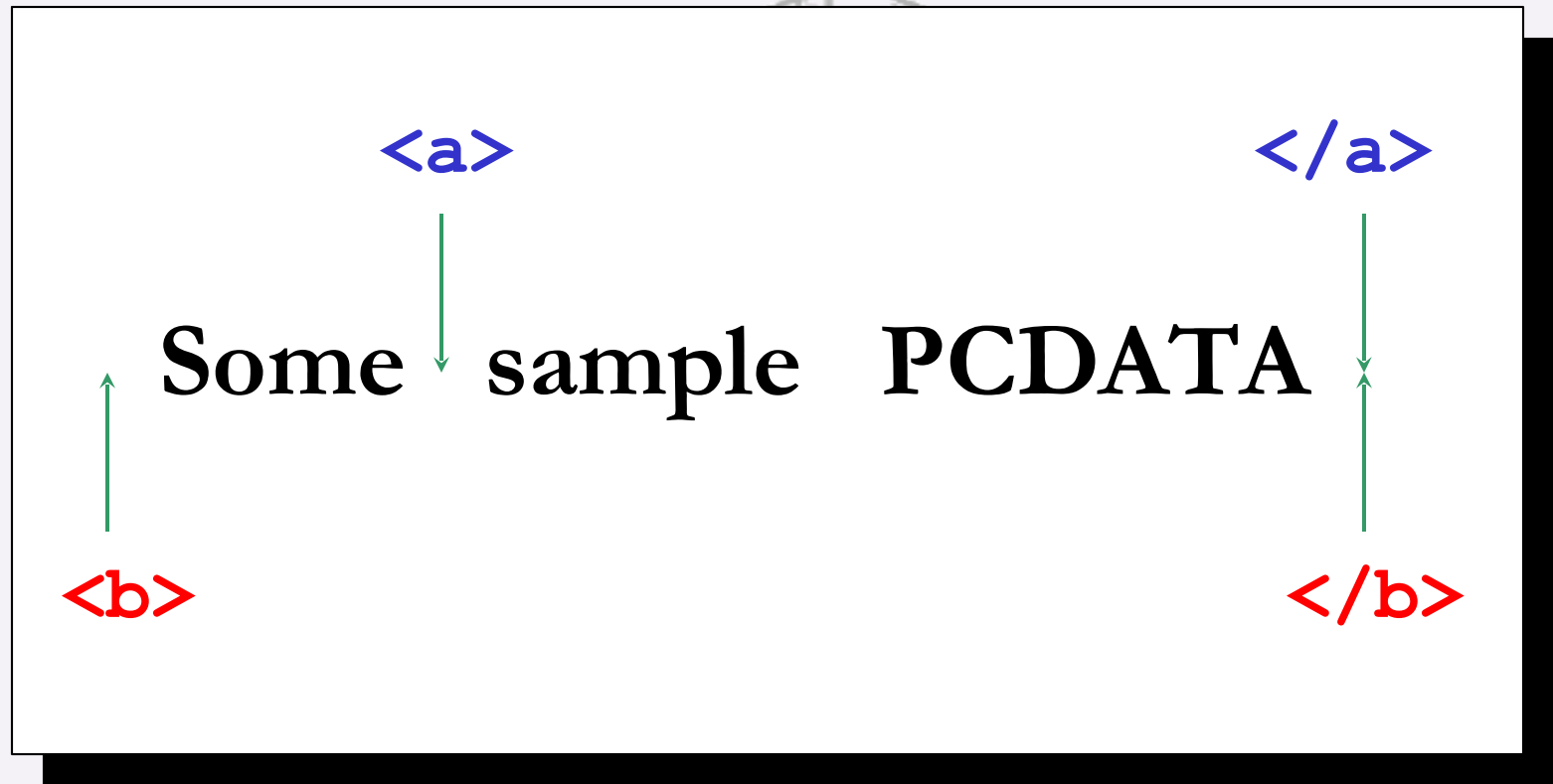
# Overlapping Hierarchies

## Case 11: 'Classic' overlap



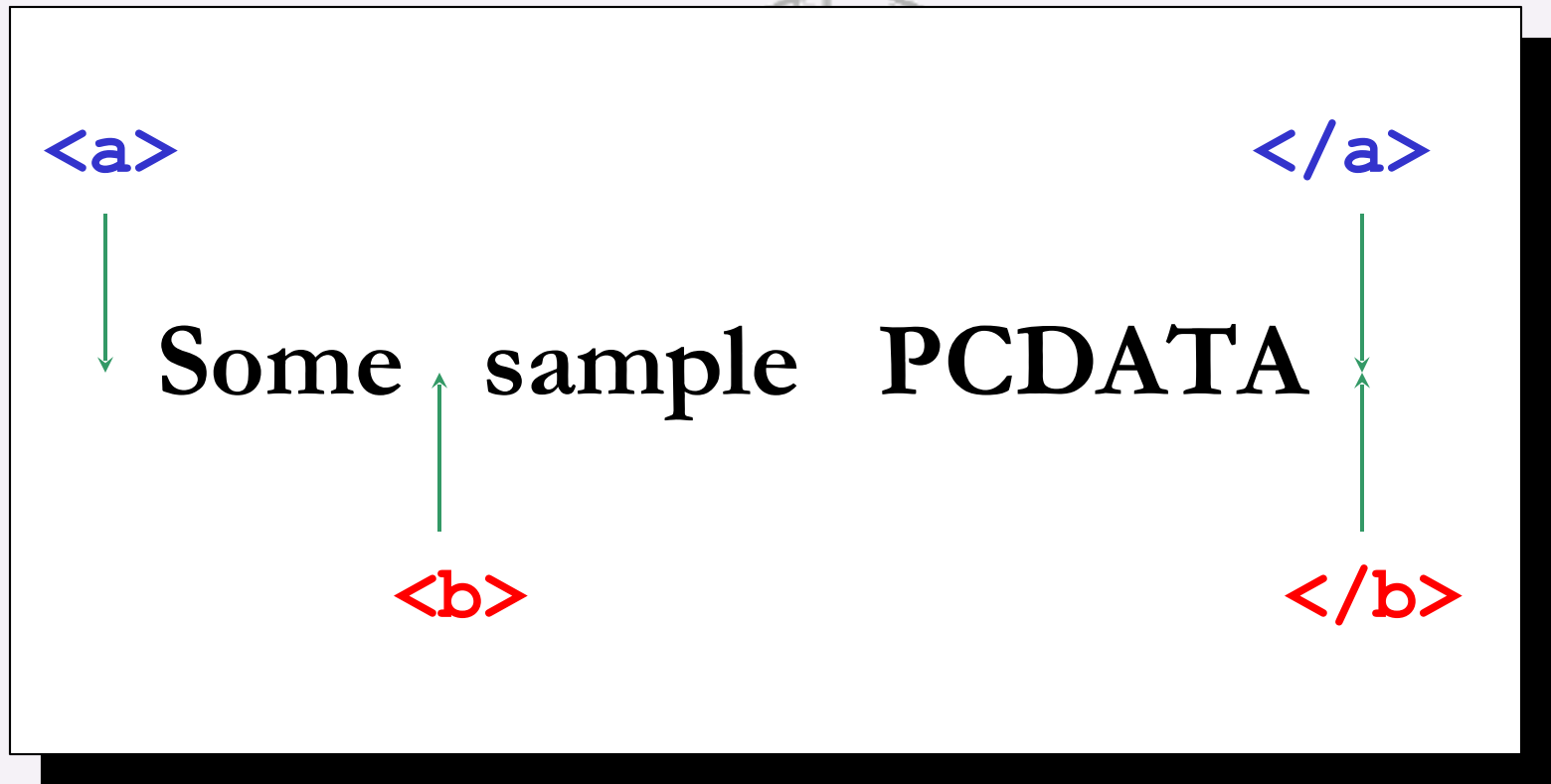
# Overlapping Hierarchies

## Case 4: Shared end point



# Overlapping Hierarchies

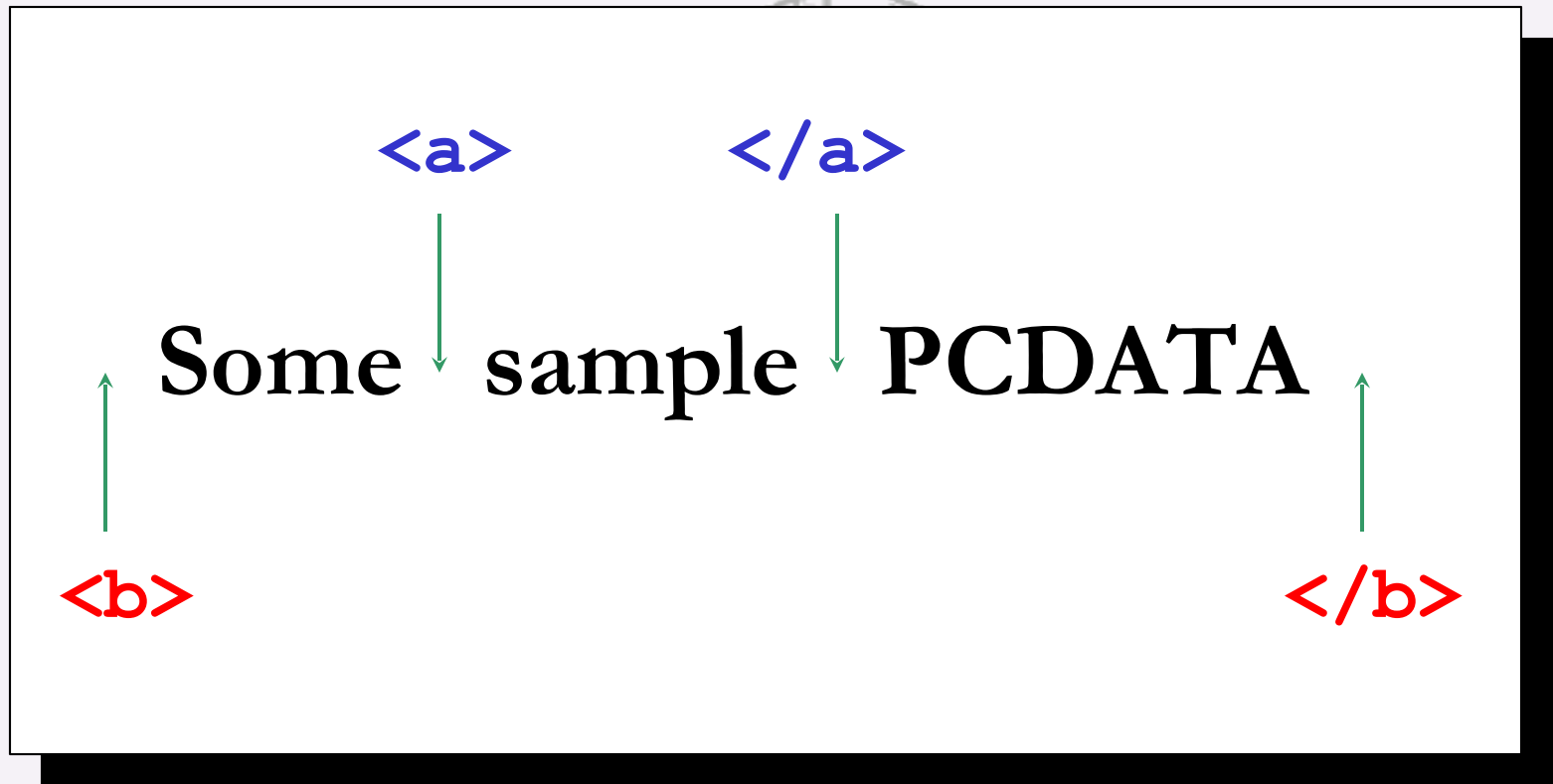
## Case 10: Shared end point



`</text>`

# Overlapping Hierarchies

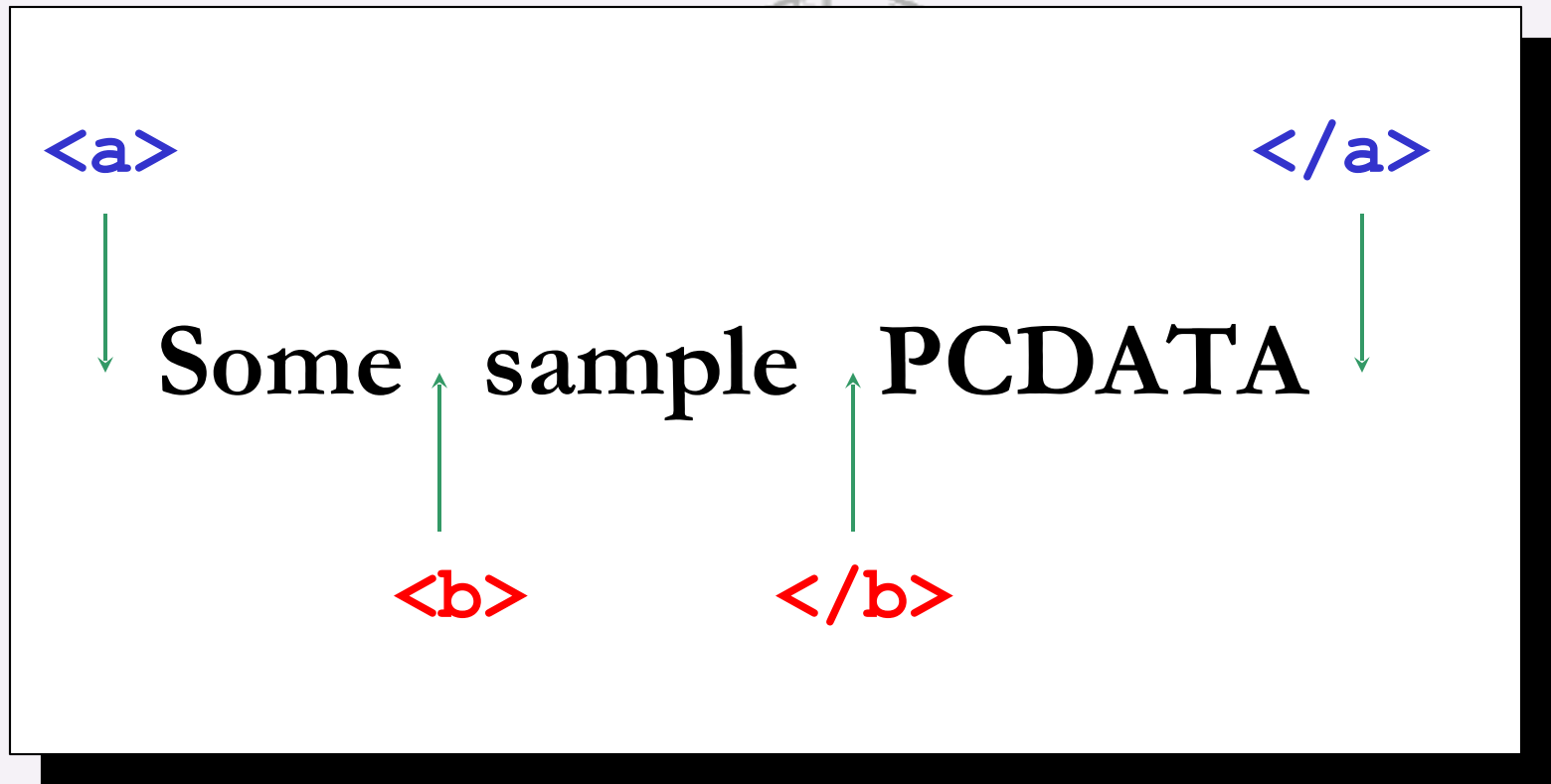
## Case 5: One element contains other



`</text>`

# Overlapping Hierarchies

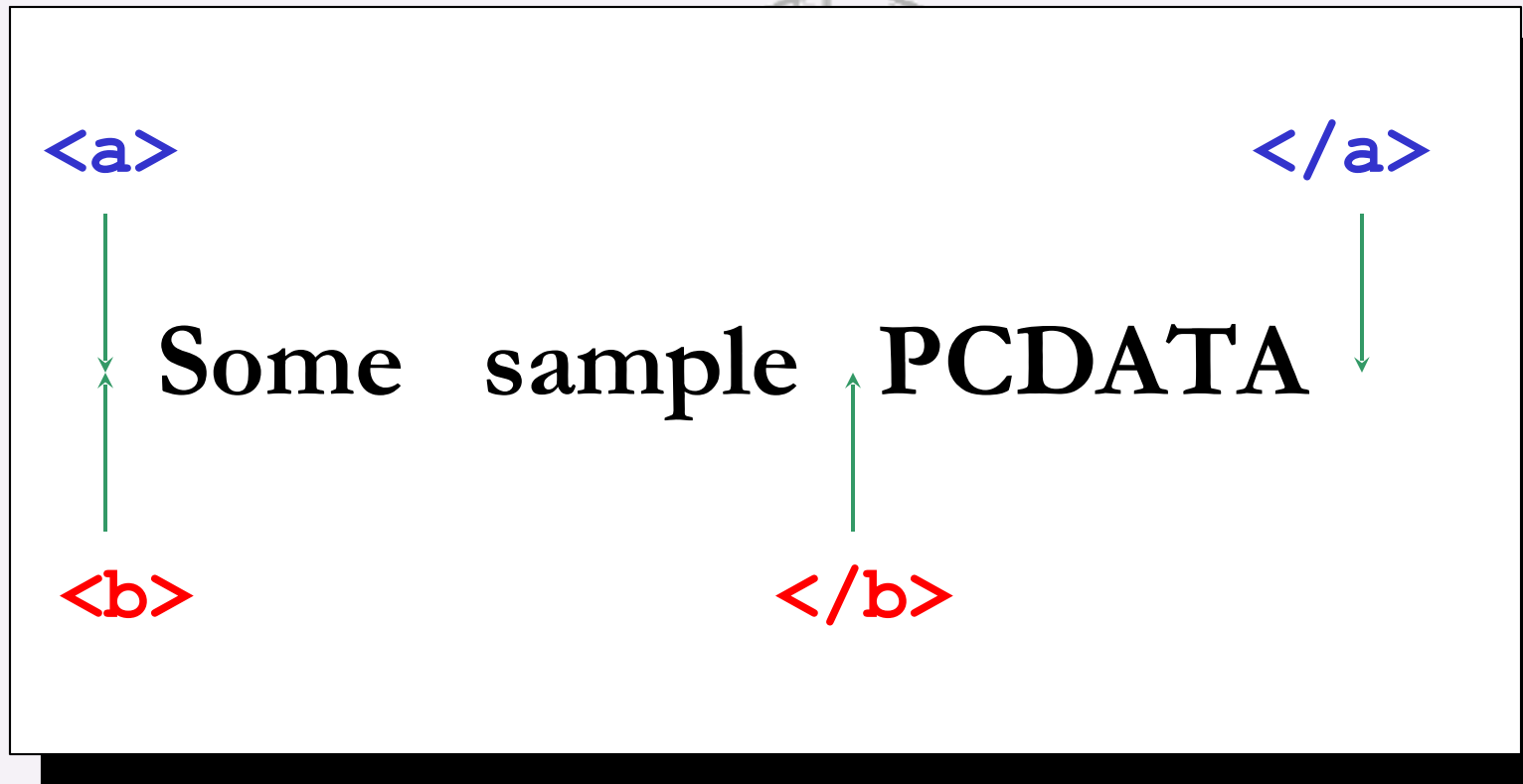
## Case 9: One element contains other



`</text>`

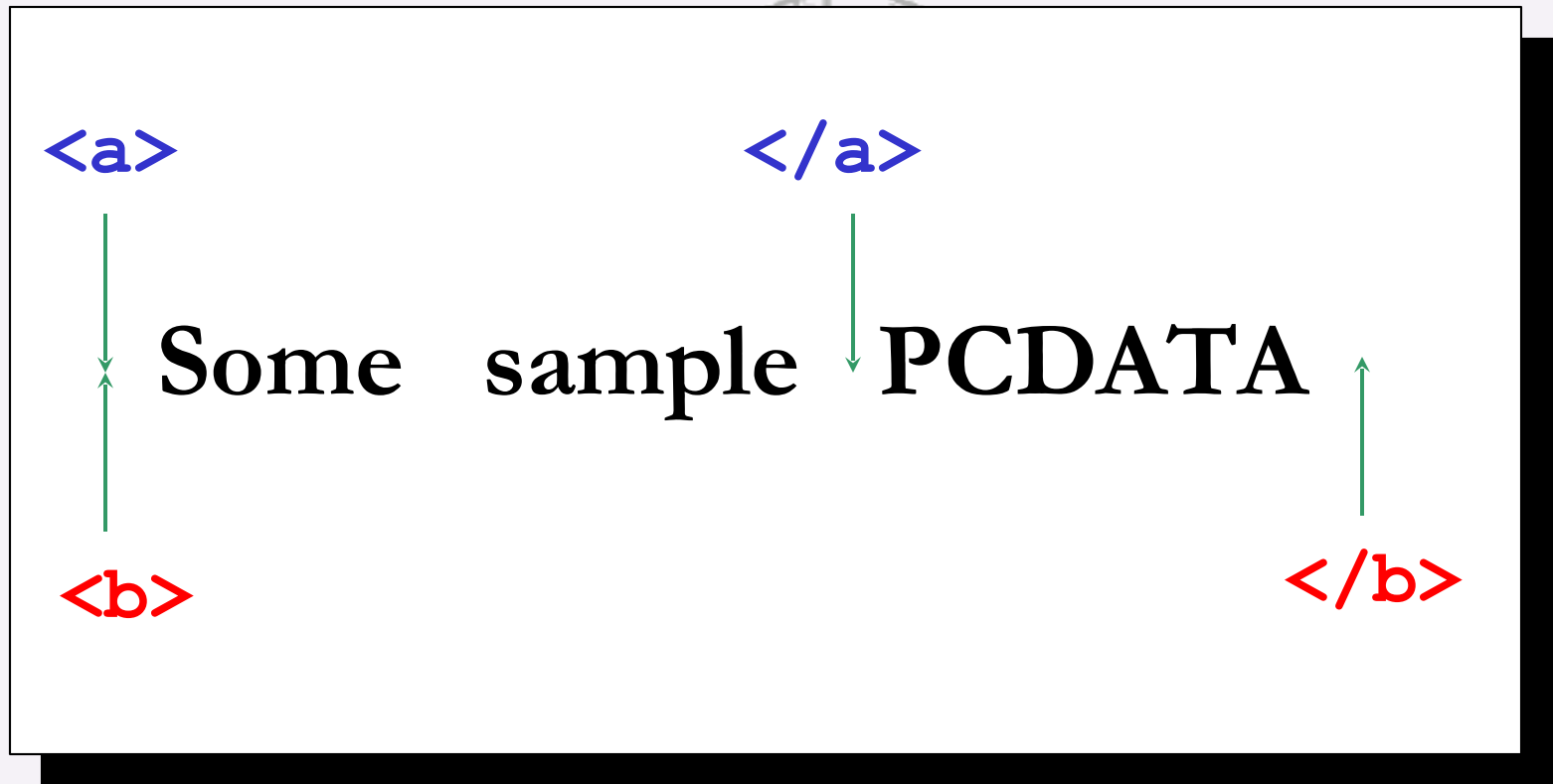
# Overlapping Hierarchies

## Case 6: Shared start point



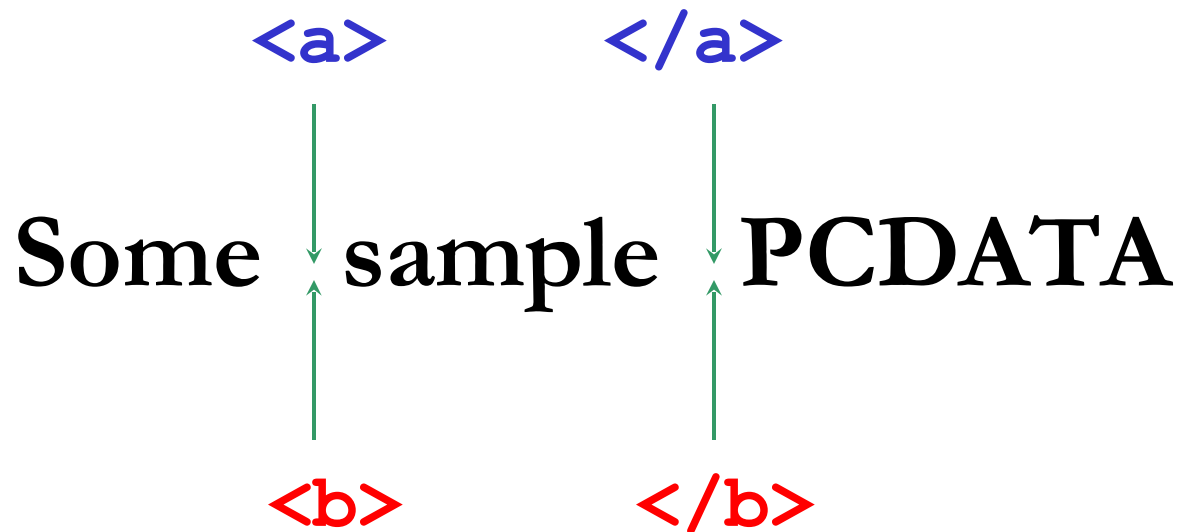
# Overlapping Hierarchies

## Case 8: Shared start point



# Overlapping Hierarchies

## Case 7: Shared start and end points





# Overlapping Hierarchies

Cases 1, 5, 9 & 13 handled by traditional markup

```
<b>Some</b>  
sample  
<a>PCDATA</a>
```

```
<b>Some  
<a>sample</a>  
PCDATA</b>
```

```
<a>Some</a>  
sample  
<b>PCDATA</b>
```

```
<a>Some  
<b>sample</b>  
PCDATA</a>
```

Tree model imposes parent-child relationship here

# Overlapping Hierarchies

'Classic' overlap requires alternative methods

```
<b>Some  
<a>sample</b>  
PCDATA</a>
```

```
<a>Some  
<b>sample</a>  
PCDATA</b>
```

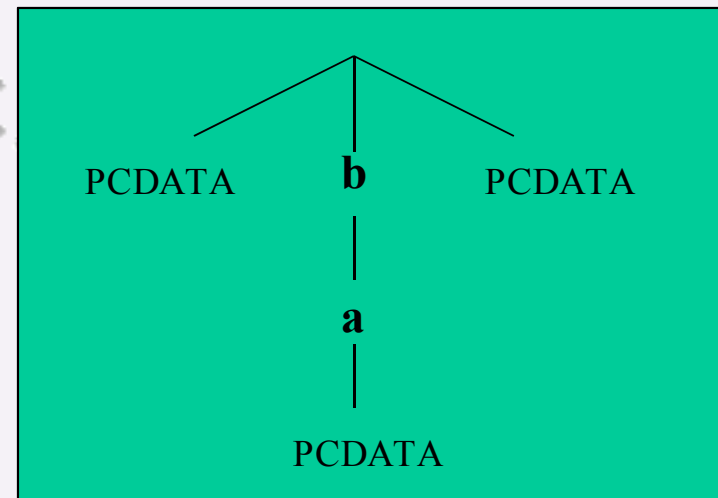
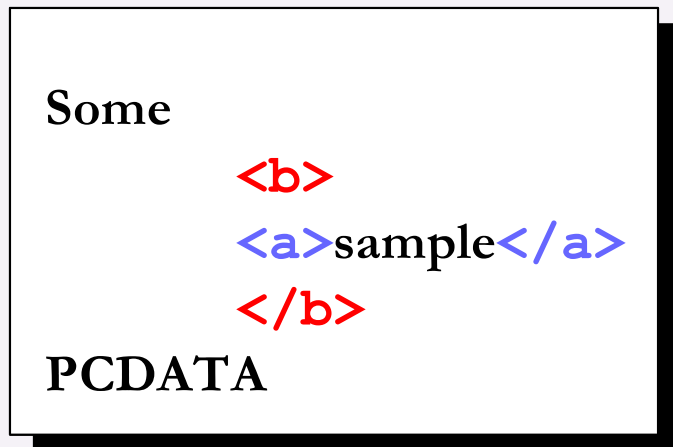
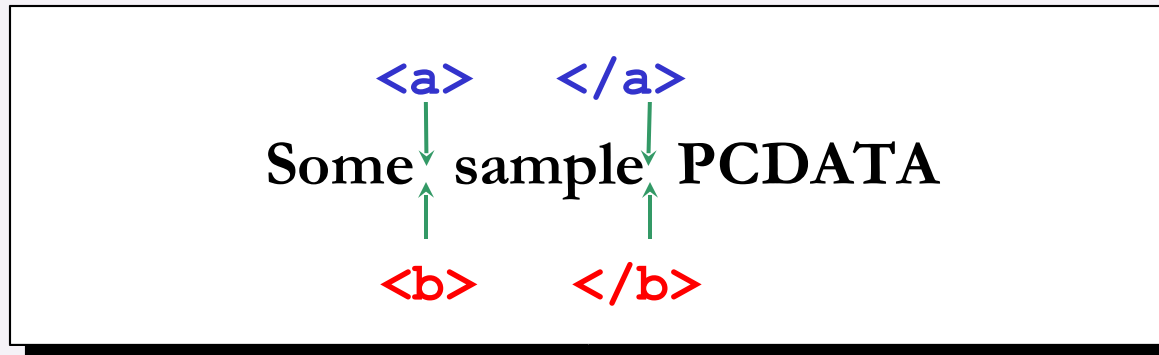
## Common solutions:

- Milestones
- Stand-off markup
- Non-SGML/XML approaches  
e.g. MECS/TexMECS  
(Sperberg-McQueen and Huitfeldt)

## Limitations

# Overlapping Hierarchies

## Hierarchical assumptions of tree model



# Bottom-Up Virtual Hierarchies

## Overview

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