

# UNIFYING THE EDITING EXPERIENCE

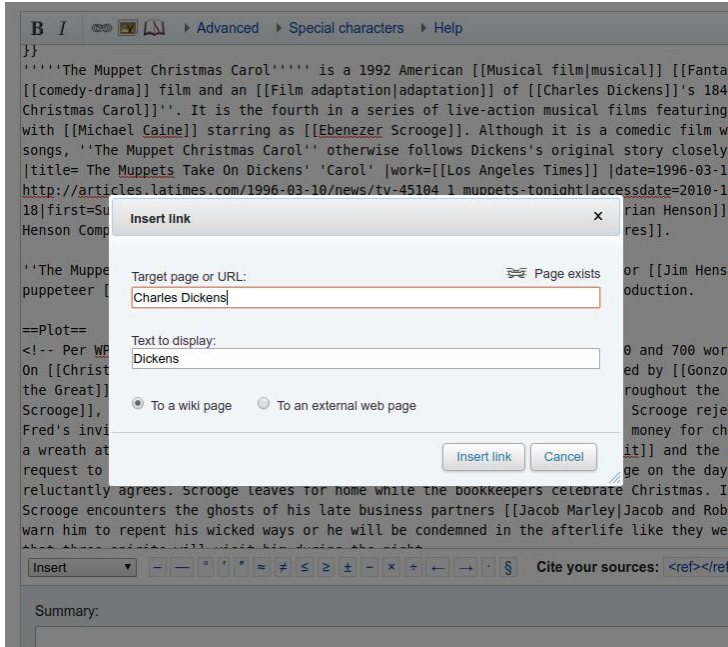


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# Improved tools



# Links

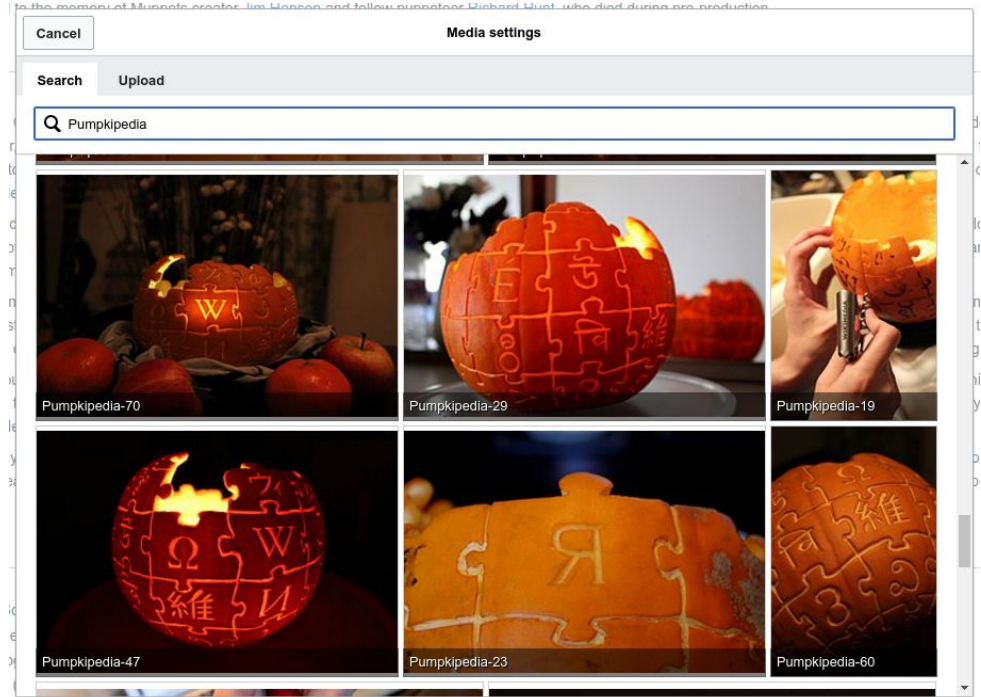
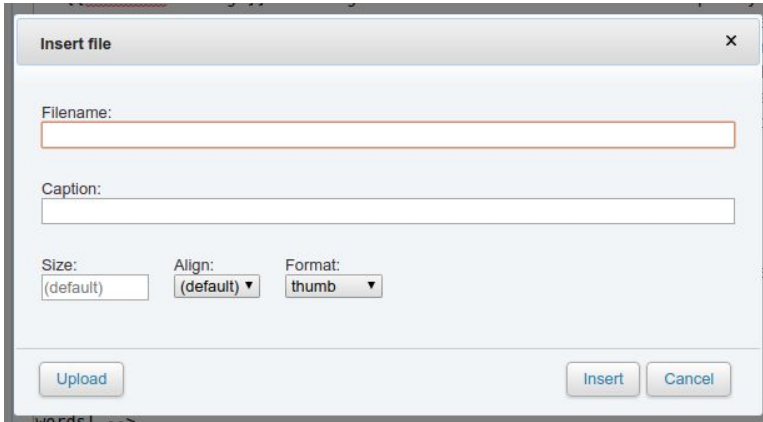


The screenshot shows a text editor window with a rich text toolbar at the top. The main text area contains a paragraph about 'The Muppet Christmas Carol' with several words highlighted in blue, indicating they are links. An 'Insert link' dialog box is open in the foreground. The dialog has a title bar with 'Insert link' and a close button. It contains a 'Target page or URL:' field with 'Charles Dickens' entered. To the right of this field is a checkbox labeled 'Page exists'. Below the URL field is a 'Text to display:' field with 'Dickens' entered. At the bottom of the dialog are two radio buttons: 'To a wiki page' (which is selected) and 'To an external web page'. There are 'Insert link' and 'Cancel' buttons at the bottom right of the dialog. The background text is partially obscured by the dialog box.



The screenshot shows a Wikipedia article titled 'The Muppet Christmas Carol'. The article text is partially visible, showing the beginning of the first paragraph. A search overlay is present in the foreground, showing a search bar with 'Charles Dickens Museum' entered. The search results show a link to 'Charles Dickens Museum' with a small thumbnail image. The search overlay also has 'Cancel' and 'Done' buttons. The Wikipedia article's toolbar at the top includes options for Paragraph, text formatting, linking, and inserting. The article title is 'The Muppet Christmas Carol' with a '[edit | edit source]' link next to it. Below the title is the text 'From Wikipedia, the free encyclopedia'. There are also options for 'Use mdy dates' and 'Use American English'.

# Images



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# Citations: before

A screenshot of a software interface for adding a citation. It features a 'List (32)' tab and an 'Add' button. A user name '[ Provelt ]' is visible in the top right. The main area contains three input fields: 'Reference name', 'Reference content', and 'Main template'. The 'Main template' field is currently set to 'No template'. At the bottom, there are 'Filter fields' and 'Show all fields' buttons, and an 'Insert' button.

A screenshot of a dialog box titled 'Insert reference'. It contains a single text input field labeled 'Reference text'. At the bottom right, there are 'Insert' and 'Cancel' buttons.

A screenshot of a 'Web citation' dialog box. It contains several input fields: 'Last name', 'First name', 'Title', 'URL', 'Website name', 'Publisher', 'Access date', 'Ref<sup>i</sup>', 'Ref name', and 'Ref group'. There are also 'Insert', 'Show/hide extra fields', 'Preview', 'Cancel', and 'Reset form' buttons at the bottom.

# Citations: after

released by [Walt Disney Pictures](#).

**Cancel** **Add a citation**

**Automatic** **Manual** **Re-use**

URL, DOI, ISBN or PMC/PMID

**Generate**

original story closely. The film was produced and directed by [Walt Disney Pictures](#).

**Back** **Add a citation**

 **News** **Insert**

Hassan, Genevieve (2017-06-25). "The Hollywood stars who quit acting" [↗](#). *BBC News*. Retrieved 2017-08-06.

Powered by Zotero

# Find and replace

Scro{3,}ge

1 of 3



Aa



Scrooge

Replace

Replace all

Done

narrators throughout the film. [Ebenezer Scrooge](#), a surly money-lender, does not share the merriment of Christmas. **Scrooooooge** rejects his nephew Fred's invitation to Christmas dinner, dismisses two gentlemen's collecting money for charity, and tosses a wreath at a carol singing [Bean Bunny](#). His loyal employee [Bob Cratchit](#) and the other bookkeepers request to have Christmas Day off since there will be no business for **Scrooooooge** on the day, to which he reluctantly agrees. Scrooge leaves for home while the bookkeepers celebrate Christmas. In his house, Scrooge encounters the ghosts of his late business partners [Jacob and Robert Marley](#), who warn him to repent his wicked ways or he will be



Theatrical release poster



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# De-duplication



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MacBook Pro

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# Failures



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# Undo!

1. Use a tool
2. Try to undo
3. (◡ ◦ ◻ ◦) ◡ ◡ ——— ◡

# Accessibility

No keyboard shortcuts



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# Mode switching



# Different interfaces

Article Talk Read Edit Edit source View history More Search Wikipedia

Paragraph A Cite Insert Ω ? Save changes

## Editing The Muppet Christmas Carol

<sup>[1]</sup> Use mdy dates Use American English

**The Muppet Christmas Carol** is a 1992 American musical fantasy comedy-drama film and an adaptation of Charles Dickens's 1843 novel *A Christmas Carol*. It is the fourth in a series of live-action musical films featuring *The Muppets*, with Michael Caine starring as Ebenezer Scrooge. Although it is a comedic film with contemporary songs, *The Muppet Christmas Carol* otherwise follows Dickens's original story closely.<sup>[2]</sup> The film was produced and directed by Brian Henson for Jim Henson Productions and released by Walt Disney Pictures.

*The Muppet Christmas Carol* was dedicated to the memory of *Muppets* creator Jim Henson and fellow puppeteer Richard Hunt, who died during pre-production.

### Plot

## Editing The Muppet Christmas Carol

B I Advanced Special characters Help

Heading Format A+ A- A^ A\_ Insert

''''The Muppet Christmas Carol'''' is a 1992 American [[Musical film|musical]] [[Fantasy film|fantasy]] [[comedy-drama]] film and an [[Film adaptation|adaptation]] of [[Charles Dickens]]'s 1843 novel ''[[A Christmas Carol]]''. It is the fourth in a series of live-action musical films featuring [[The Muppets]], with [[Michael Caine]] starring as [[Ebenezer Scrooge]]. Although it is a comedic film with contemporary songs, ''The Muppet Christmas Carol'' otherwise follows Dickens's original story closely.<ref>{{cite news |title= The Muppets Take On Dickens' 'Carol' |work=[[Los Angeles Times]] |date=1996-03-10 |url= http://articles.latimes.com/1996-03-10/news/tv-45104\_1\_muppets-tonight|accessdate=2010-10-18|first=Susan|last=King}}</ref> The film was produced and directed by [[Brian Henson]] for [[The Jim Henson Company|Jim Henson Productions]] and released by [[Walt Disney Pictures]].

''The Muppet Christmas Carol'' was dedicated to the memory of *Muppets* creator [[Jim Henson]] and fellow puppeteer [[Richard Hunt (puppeteer)|Richard Hunt]], who died during pre-production.

# Different interfaces

Article Talk Read Edit Edit source View history More

Paragraph Cite Save changes

## *The Muppet Christmas Carol* [edit] [edit source]

From Wikipedia, the free encyclopedia

''''*The Muppet Christmas Carol*'''' is a 1992 American [[Musical film|musical]] [[Fantasy film|fantasy]] [[comedy-drama]] film and an [[Film adaptation|adaptation]] of [[Charles Dickens]]'s 1843 novel ''[[A Christmas Carol]]'' . It is the fourth in a series of live-action musical films featuring [[The Muppets]], with [[Michael Caine]] starring as [[Ebenezer Scrooge]]. Although it is a comedic film with contemporary songs, ''The Muppet Christmas Carol'' otherwise follows Dickens's original story closely.<ref>{{cite news |title= The Muppets Take On Dickens' 'Carol' |work=[[Los Angeles Times]] |date=1996-03-10 |url= http://articles.latimes.com/1996-03-10/news/ty-45104\_1\_muppets-tonight|accessdate=2010-10-18|first=Susan|last=King}}</ref> The film was produced and directed by [[Brian Henson]] for [[The Jim Henson Company|Jim Henson Productions]] and released by [[Walt Disney Pictures]].

''The Muppet Christmas Carol'' was dedicated to the memory of Muppets creator [[Jim Henson]] and fellow puppeteer [[Richard Hunt (puppeteer)|Richard Hunt]], who died during pre-production.



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# How it's made



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# Integration options

## Add tools to the 2010 editor

- Need to re-interface toolbar with surface
- Need to re-interface inspector with surface
- Still on a separate page
- Requires CSS duplication and maintenance

## Add wikitext to the visual editor

- Re-uses lots of code for user interfaces
- UI identical to visual editor for free
- **Tools work by default by converting VE data model output back to WikiText**

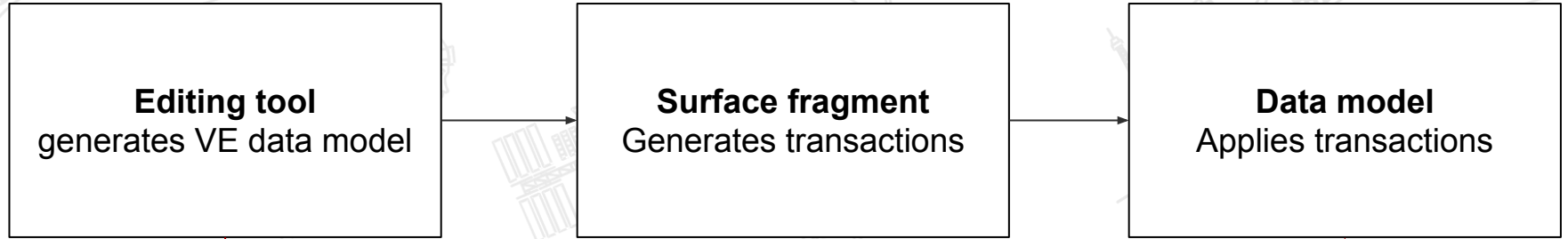
# Making it all work



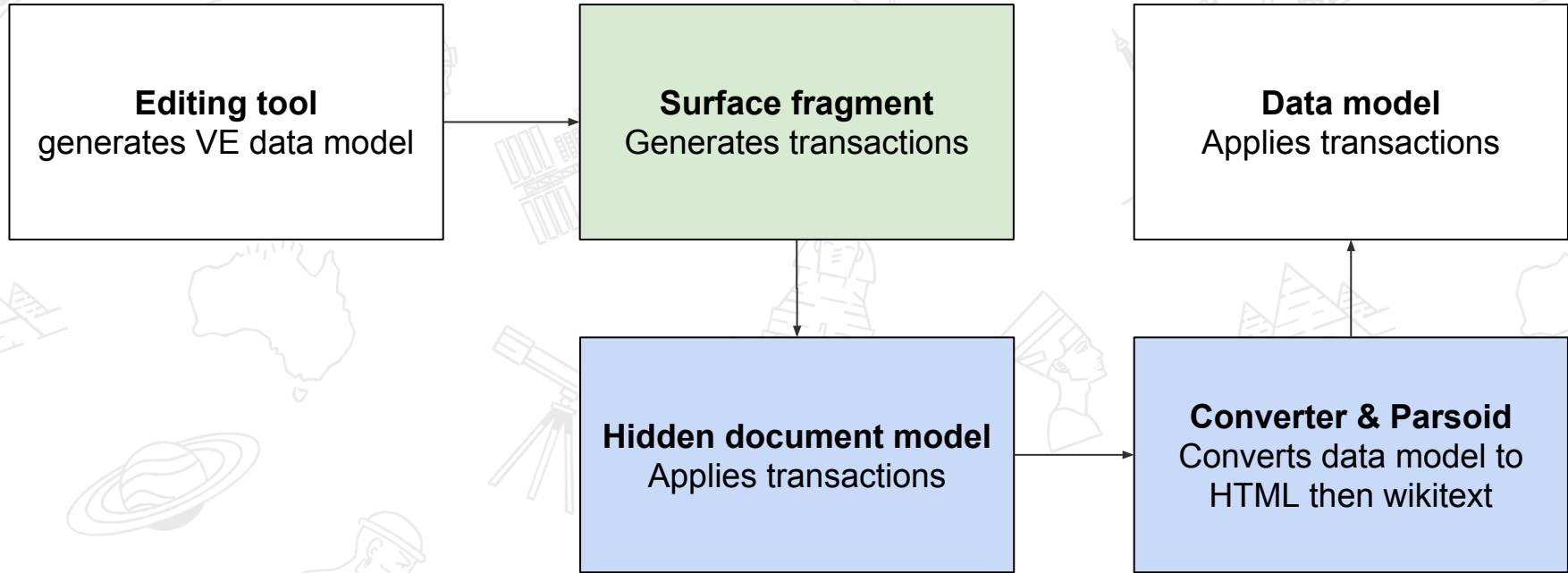
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# Overview



# Overview



# Some code

```
/**
 * @inheritdoc
 */
ve.dm.MwWikitextSurfaceFragment.prototype.convertFromSource = function ( source ) {
    var parsePromise;
    if ( !source ) {
        parsePromise = $.Deferred().resolve(
            ve.dm.Document.static.newBlankDocument()
        ).promise();
    } else {
        parsePromise = new mw.Api().post( {
            action: 'visualeditor',
            paction: 'parsefragment',
            page: mw.config.get( 'wgRelevantPageName' ),
            wikitext: source
        } ).then( function ( response ) {
            return ve.dm.converter.getModelFromDom(
                ve.createDocumentFromHtml( response.visualeditor.content )
            );
        } );
    }
    return parsePromise;
};
```



# The future



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# To-do

- Performance
- APIs
- Feedback from editors on WikiText-specific editing tools
- Client-side tools
- Editing content (not just inserting).



# VISUAL DIFFS



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# Outline

- Introduction to visual diffs
  - What and why
  - Where they are used
- Why they're complicated
- Different solutions
- Our solution
- Still to do



# Wikitext diff

– The MP since 1983, Jeremy Corbyn, had his smallest majority (15.3%) in 1983 and his largest (55.6%) in 1997. In **four** elections during Corbyn's tenure the **runners up party** have **been** the [[Liberal Democrats (UK)|Liberal Democrats]]. The 2015 result made the seat the 26th safest of Labour's 232 seats by percentage of majority.<ref>[http://www.ukpolitical.info/labour-mps-elected-2015.htm List of Labour MPs elected in 2015 by % majority] UK Political.info. Retrieved 2017-01-29</ref>

+

The MP since 1983, Jeremy Corbyn, had his smallest majority (15.3%) in 1983 and his largest (60.5%) in 2017. In **the eight** elections during Corbyn's tenure, the **[[Conservative Party (UK)|Conservatives]]** have **finished in second place four times while** the [[Liberal Democrats (UK)|Liberal Democrats]] **have also been runners up on four occasions**. The 2015 result made the seat the 26th safest of Labour's 232 seats by percentage of majority.<ref>[http://www.ukpolitical.info/labour-mps-elected-2015.htm List of Labour MPs elected in 2015 by % majority] UK Political.info. Retrieved 2017-01-29</ref>



# Visual diff

The MP since 1983, Jeremy Corbyn, had his smallest majority (15.3%) in 1983 and his largest (55.6 60.5%) in 1997 2017. In four the eight elections during Corbyn's tenure, the runners up party have been Conservatives have finished in second place four times while the Liberal Democrats have also been runners up on four occasions. The 2015 result made the seat the 26th safest of Labour's 232 seats by percentage of majority.<sup>[1]</sup>

# Edit diff

Article [Talk](#) [Read](#) [Edit](#) [View history](#) [More](#)

[Resume editing](#) **Review your changes** [Save changes](#)

Preview of edit summary:  
*No edit summary* [Visual](#) [\[\[ \]\] Wikitext](#)

:

**Imperial College London** is a [public research university](#) located in [London](#), United Kingdom. Its founder, [Prince Albert](#), envisioned an area composed of the [Victoria and Albert Museum](#), [Natural History Museum](#), [Royal Albert Hall](#), and the [Imperial Institute](#).<sup>[1][2]</sup> His wife, [Queen Victoria](#), laid the foundation stone for the Imperial Institute in 1888.<sup>[3]</sup> Imperial College London was granted [Royal Charter](#) in 1907. In the same year, the college joined the [University of London](#), before leaving it a century later.<sup>[4]</sup> Through merging with several historic medical schools, the curriculum expanded to include medicine. In 2004, [Queen Elizabeth II](#) opened the [Imperial College Business School](#).<sup>[3]</sup>

The main campus is located in [South Kensington](#). Imperial is organised into faculties of science, engineering, medicine, and business. The university's [main](#) emphasis is on emerging technology and its practical application.

Imperial is consistently placed among the top universities in the world. In 2017, it ranked 8th in the [Times Higher Education World University Rankings](#), 8th in the [QS World University Rankings](#), and 22nd in the [Academic Ranking of World Universities](#).<sup>[5]</sup> In 2015, Imperial was ranked the most innovative university in Europe.<sup>[6]</sup> Staff and alumni include 15 [Nobel laureates](#), 2 [Fields Medalists](#), 70 [Fellows of the Royal Society](#), 82 [Fellows of the Royal Academy of Engineering](#), and 78 [Fellows of the Academy of Medical Sciences](#).<sup>[7]</sup>

:

[Return to save form](#)

Engineering, and 70 Fellows of the Academy of Medical Sciences.

# History diff

Article [Talk](#)

[Read](#) [Edit](#) [View history](#)  [More](#) ▼



## Imperial College London: Difference between revisions

From Wikipedia, the free encyclopedia

Coordinates:  51.498356°N 0.176894°W﻿ / ﻿

[Browse history](#)



 **Visual**

 **Wikitext**

:

In *The World's Most Innovative Universities Rankings* by Reuters, Businessweek, and the Financial Times, Imperial ranks 1st in innovation and entrepreneurship in Europe.<sup>[6][40][41][42]</sup>

In Times Higher Education World University Subject tables it is ranked 2nd in Europe, 3rd in the world for clinical and health,<sup>[43]</sup> 4th 3rd in Europe, 9th 7th in the world for engineering and technology,<sup>[44]</sup> 3rd in Europe, 9th in the world for life sciences<sup>[45]</sup> and 4th in Europe, 13th in the world for physical sciences.<sup>[46]</sup>



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# Outline

- Introduction to visual diffs
- Why they're complicated
  - Showing the diff
  - Computing the diff
- Different solutions
- Our solution
- Still to do



# List diff

Composers with an association with Canterbury include

– \* [[Thomas Tallis]] (c. 1505–1585), became a lay clerk (singing man) at Canterbury Cathedral c. 1540 and was subsequently appointed a Gentleman of the [[Chapel Royal]] in 1543.<ref name="Bowers" />

– \* [[John Ward (composer)|John Ward]] (1571–1638), born in Canterbury, a chorister at Canterbury Cathedral, composed madrigals, works for viol consort, services, and anthems.

– \* [[Orlando Gibbons]] (1583–1625), organist, composer and Gentleman of the [[Chapel Royal]], who died in Canterbury and was buried in the cathedral.

Composers with an association with Canterbury include

+ # [[Thomas Tallis]] (c. 1505–1585), became a lay clerk (singing man) at Canterbury Cathedral c. 1540 and was subsequently appointed a Gentleman of the [[Chapel Royal]] in 1543.<ref name="Bowers" />

+ # [[John Ward (composer)|John Ward]] (1571–1638), born in Canterbury, a chorister at Canterbury Cathedral, composed madrigals, works for viol consort, services, and anthems.

+ # [[Orlando Gibbons]] (1583–1625), organist, composer and Gentleman of the [[Chapel Royal]], who died in Canterbury and was buried in the cathedral.



# Link diff

In accordance with an [[Enclosure Act]] of 1770, promoted by the Duchy of Lancaster, the Royal Forest of Knaresborough was enclosed. The Enclosure Award of 1778 clarified ownership of land in the Harrogate area. Under the Award {{convert|200|acre}} of land, which included the springs known at that time, were reserved as a public common, the Stray, which has remained public open space.<ref><http://www.harrogate.gov.uk/harrogate-3360> Harrogate Borough Council: the Stray</ref> The Enclosure

In accordance with an [[Enclosure Act]] of 1770, promoted by the Duchy of Lancaster, the Royal Forest of Knaresborough was enclosed. The Enclosure Award of 1778 clarified ownership of land in the Harrogate area. Under the Award {{convert|200|acre}} of land, which included the springs known at that time, were reserved as a public common, **[[the Stray (Harrogate)|The Stray]]**, which has remained public open space.<ref><http://www.harrogate.gov.uk/harrogate-3360> Harrogate Borough





# Table diff

Line 300:

! style="WIDTH: 20%" | YEAR

! style="WIDTH: 20%" | %A\*

- ! style="WIDTH: 20%" | %A\*A

! style="WIDTH: 20%" | %A\*AB

|-

| 2016

| 55.7

- | 88.0

| 96.3

|-

| 2015

Line 300:

! style="WIDTH: 20%" | YEAR

! style="WIDTH: 20%" | %A\*

! style="WIDTH: 20%" | %A\*AB

|-

| 2016

| 55.7

| 96.3

|-

| 2015



# HTML diffing

Old:

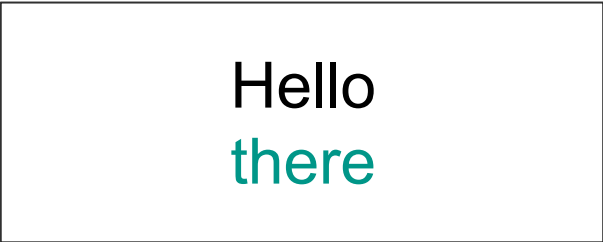
```
<p>Hello</p>
```

New:

```
<p>Hello</p><p>there</p>
```

Display:

```
<p>Hello</p><ins><p>there</p></ins>
```



# HTML diffing

Old:

```
<p>Hello</p><p>there</p>
```

New:

```
<p>Hello</p><p><b>there</b></p>
```

Display?

```
<p>Hello</p><p><ins><b></ins>there<ins></b></ins></p>
```

Hello  
???

# HTML diffing

Old:

```
<p>Hello</p><p>there</p>
```

New:

```
<p>Hello</p><p><b>there</b></p>
```

Display:

```
<p>Hello</p><p><del>there</del> <ins><b>there</b></ins></p>
```



# HTML diffing

Old:

```
<p>Hello</p><p>there</p>
```

New:

```
<p>Hello there</p>
```

Hello ?? there

Display?

```
<p>Hello<del></p><p></del><ins> </ins>there</p>
```

# Not so simple



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# Outline

- Introduction to visual diffs
- Why they're complicated
- Different solutions
  - Advantages and disadvantages
- Our solution
- Still to do



# Different possible approaches

- Diff the HTML
  - Advantage: generic
  - Disadvantage: generic
- Diff the visual editor data model
  - Advantages:
    - built-in distinction between content and structure
    - complex trees represented as single templates (eg block images)
    - better semantic description of the document
  - Disadvantage: not generic to historical revisions



# Different possible approaches

- Linear-diff then (parse)
  - Advantage: diff step is simple, relatively quick
  - Disadvantage: parsing step lengthy, specific
- Use the transaction history
  - Advantage: ignoring unchanged parts saves a lot of time
  - Disadvantage: removing then retyping, doesn't work on history diffs
- Diff as a tree
  - Advantage: conceptually “correct” since document is a tree, therefore generic
  - Disadvantage: high performance cost

# Outline

- Introduction to visual diffs
- Why they're complicated
- Different solutions
- Our solution
  - Tree diffing
  - Time saving
  - Examples
- Still to do



# Tree diffing



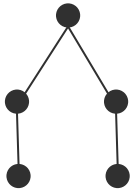
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# Tree diffing

Old:

```
<document>  
  <p>Hello</p>  
  <p>there</p>  
</document>
```



New:

```
<document>  
  <p>Hello there</p>  
</document>
```

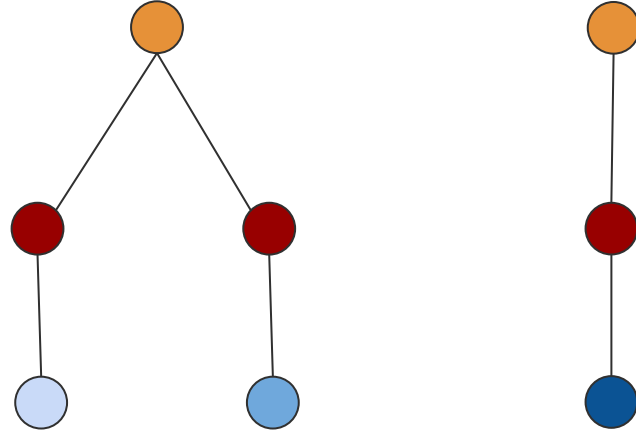


Display?

# Tree diffing

Available moves:

- Remove
- Insert
- Change

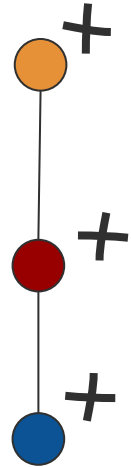
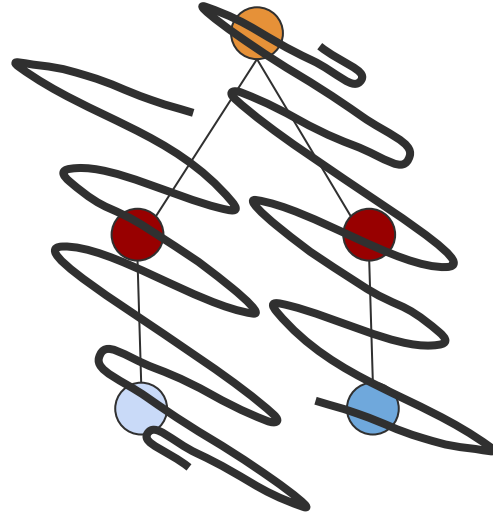


# Tree diffing

Available moves:

- Remove
- Insert
- Change

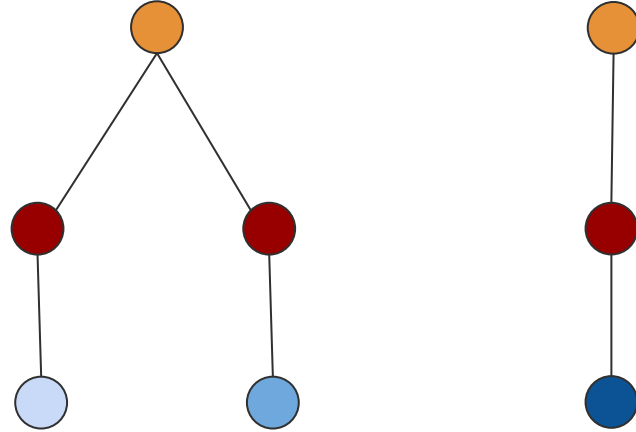
8 moves



# Tree diffing

Available moves:

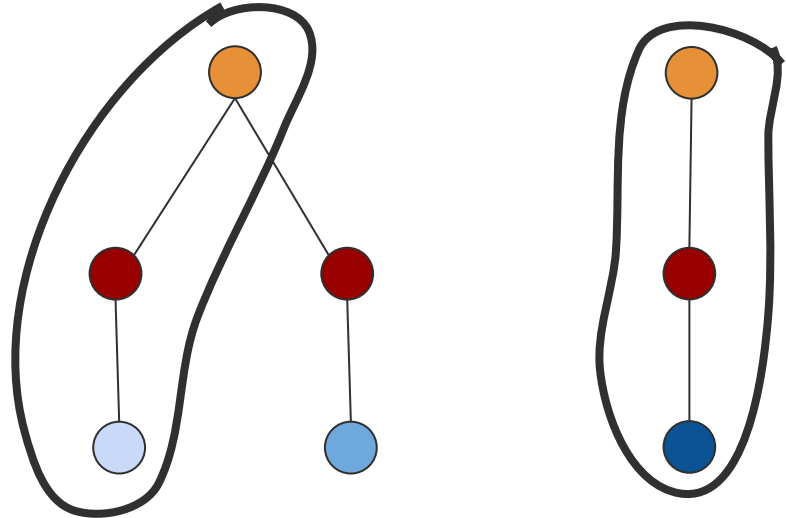
- Remove
- Insert
- Change



# Tree diffing

Available moves:

- Remove
- Insert
- Change



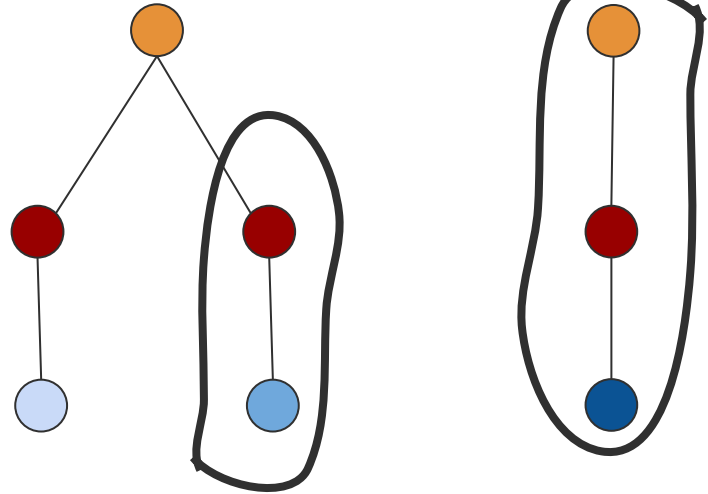
Dennis Shasha and Kaizhong Zhang, 1990.  
[github.com/Tchanders/treeDiffer.js](https://github.com/Tchanders/treeDiffer.js)



# Tree diffing

Available moves:

- Remove
- Insert
- Change

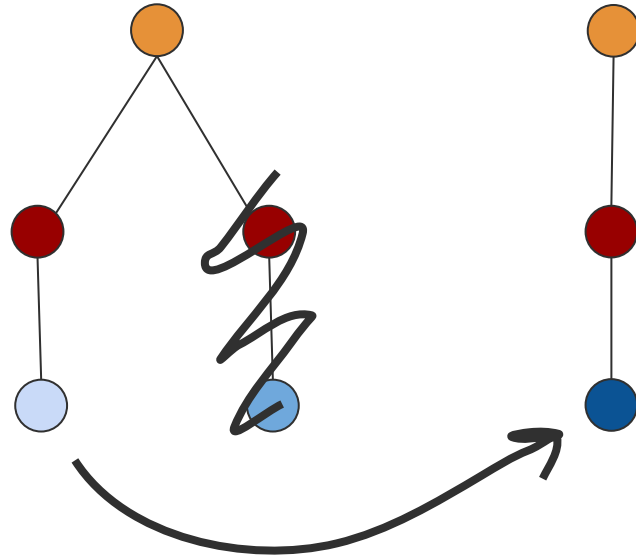


# Tree diffing

Available moves:

- Remove
- Insert
- Change

3 moves



# Tree diffing

Old:

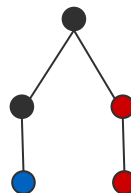
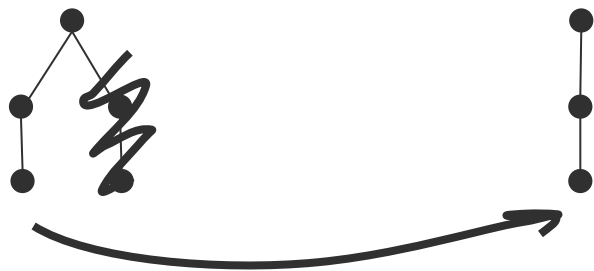
```
<document>  
  <p>Hello</p>  
  <p>there</p>  
</document>
```

New:

```
<document>  
  <p>Hello there</p>  
</document>
```

Display:

```
<document>  
  <p>Hello there</p>  
  <p>there</p>  
</document>
```



# Tree diffing

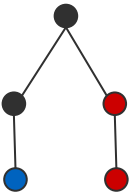
Old:

```
<document>  
  <p>Hello</p>  
  <p>there</p>  
</document>
```

New:

```
<document>  
  <p>Hello there</p>  
</document>
```

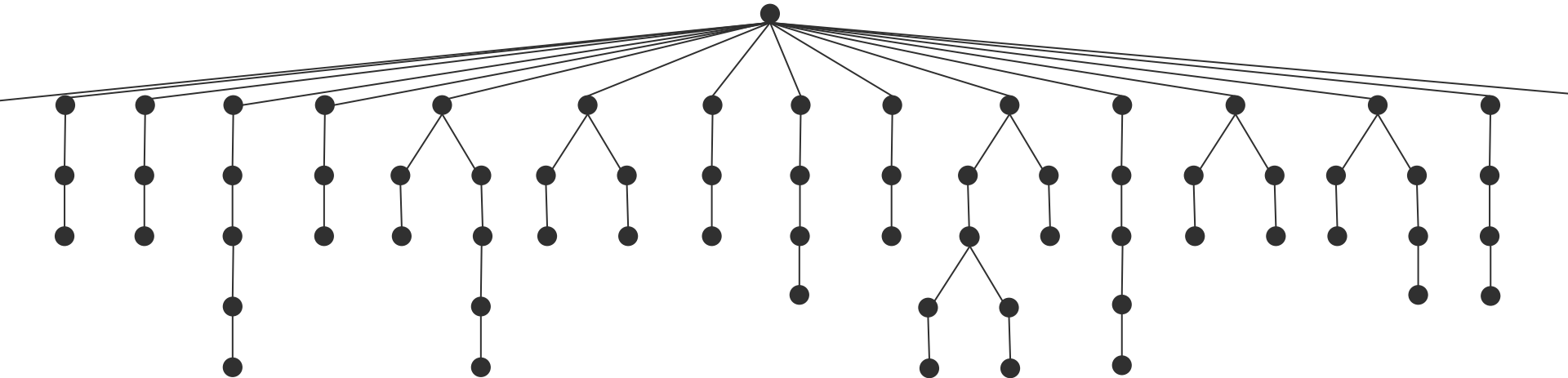
Display:



# Time saving



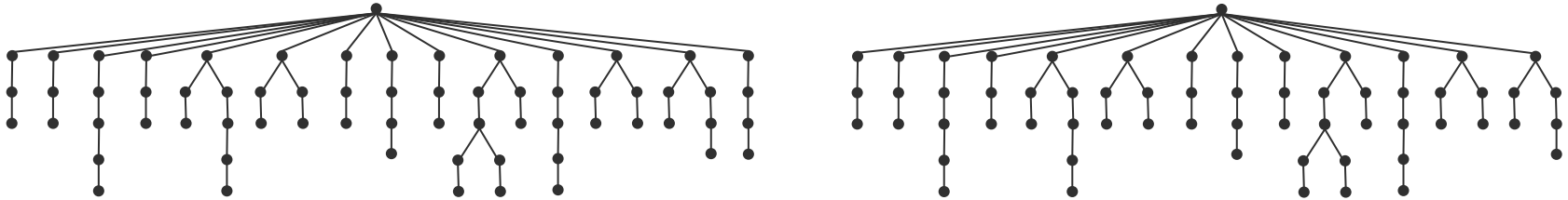
# Time saving



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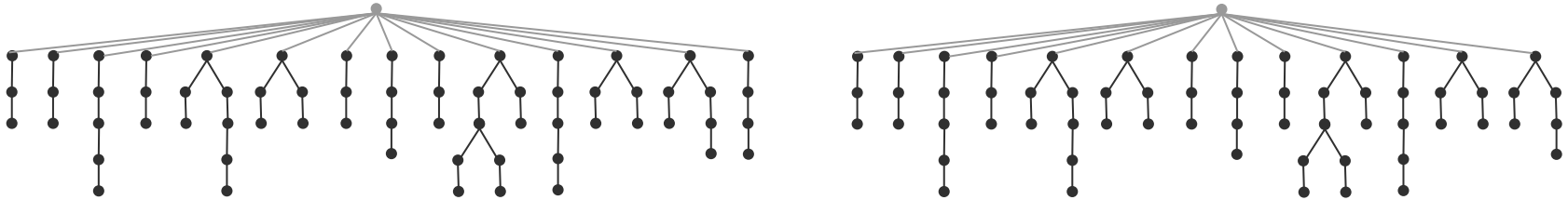
# Time saving

Break the document into subtrees and discard any identical pairs



# Time saving

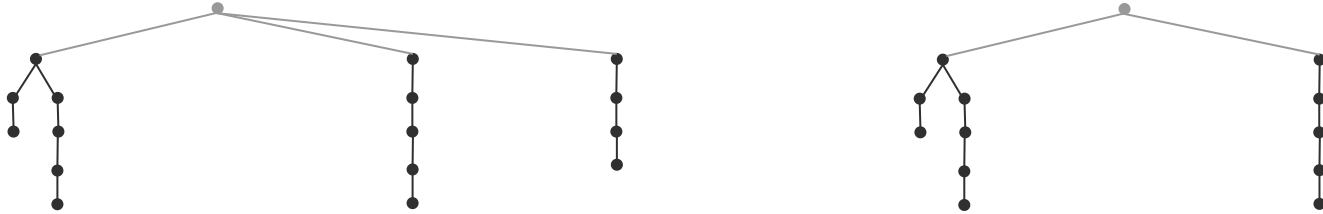
Break the document into subtrees and discard any identical pairs





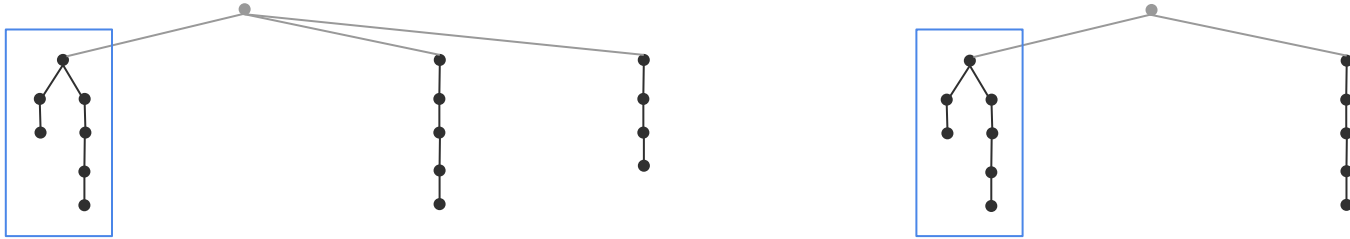
# Time saving

Break the document into subtrees and discard any identical pairs



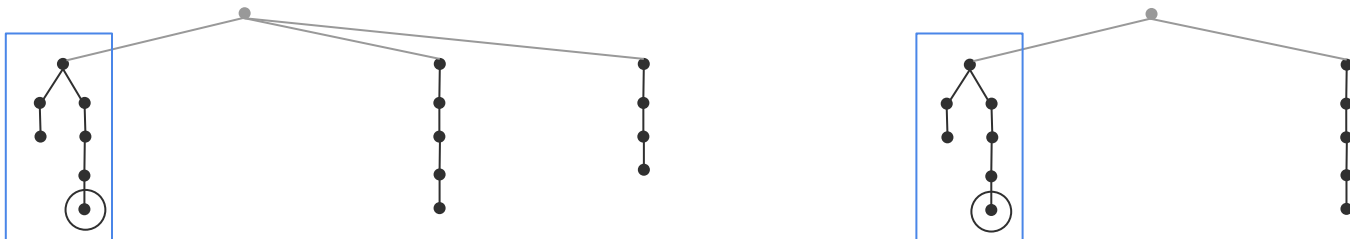
# Time saving

Tree diff the subtrees. When a pair of subtrees is close enough, stop diffing them.



# Time saving

Linear diff any changed nodes within each tree diff *iff they contain content*



Freebie: moves

[github.com/edg2s/google-diff-match-patch](https://github.com/edg2s/google-diff-match-patch)

# Moves

Line 1:

Creating a different world is a literary device used by authors to illustrate ideas. By placing the story in the setting of a different world, the author can change the way that things happen. For example, the author might imagine a world that has very little water or a world that has very little dry land. Deciding what a world looks like and how the world works is called world-building. Thinking about their world helps the author make good choices about what happens to the characters in the story.

-

Some authors think about many details, such as what languages the characters speak and what the architecture is on the world.

Line 1:

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+

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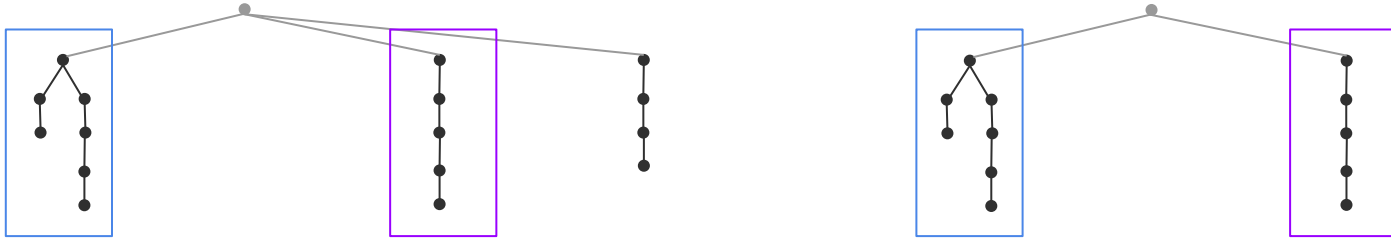


# Moves

- ▲ Some authors think about many details, such as what languages the characters speak and what the architecture is on the world. Creating a different world is a literary device used by authors to illustrate ideas. By placing the story in the setting of a different world, the author can change the way that things happen. For example, the author might imagine a world that has very little water or a world that has very little dry land. Deciding what a world looks like and how the world works is **not** called world-building. Thinking about their world helps the author make good choices about what happens to the characters in the story.

# Time saving

Tree diff the subtrees. When a pair of subtrees is close enough, stop diffing them.



Freebie: removes/inserts

# Time saving

Use a time limit

- For the tree diff
- For the linear diff

May not get minimal diff





# List diff

Composers with an association with Canterbury include

1. **Thomas Tallis** (c. 1505–1585), became a lay clerk (singing man) at Canterbury Cathedral c. 1540 and was subsequently appointed a Gentleman of the [Chapel Royal](#) in 1543.<sup>[67]</sup>
2. **John Ward** (1571–1638), born in Canterbury, a chorister at Canterbury Cathedral, composed madrigals, works for viol consort, services, and anthems.
3. **Orlando Gibbons** (1583–1625), organist, composer and Gentleman of the [Chapel Royal](#), who died in Canterbury and was buried in the cathedral.

Bullet list changed to Numbered list

# Link diff

In accordance with an [[Enclosure Act]] of 1770, promoted by the Duchy of Lancaster, the Royal Forest of Knaresborough was enclosed. The Enclosure Award of 1778 clarified ownership of land in the Harrogate area. Under the Award {{convert|200|acre}} of land, which included the springs known at that time, were reserved as a public common, the Stray, which has remained public open space.<ref><http://www.harrogate.gov.uk/harrogate-3360> Harrogate Borough Council: the Stray</ref> The Enclosure

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# Link diff

In accordance with an [Enclosure Act](#) of 1770, promoted by the Duchy of Lancaster, the Royal Forest of Knaresborough was enclosed. The Enclosure Award of 1778 clarified ownership of land in the Harrogate area. Under the Award 200 acres (81 ha) of land, which included the springs known at that time, were reserved as a public common, ~~the Stray~~ [The Stray](#), which has remained public open space.<sup>[13]</sup> The Enclosure Award facilitated development around the Stray. During the 19th century, the area between High Harrogate and Low Harrogate, which until then had remained separate communities a mile apart, was developed, and what is now the central area of Harrogate was built on high ground overlooking Low Harrogate.<sup>[16]</sup> An area to the north of the developing

:

In the 17th and 18th centuries fu  
and sulphur springs were found  
were opened for visitors in High  
World's End.) In Low Harrogate t

In accordance with an Enclosure  
Knaresborough was enclosed. T  
Under the Award 200 acres (81 l

The Stray is a long area of public parkland  
in the centre of Harrogate, North Yorkshire,  
comprising 200 acres of contiguous open  
land linking the spa town's curative springs  
and wells. The contiguous area of land, not  
all of which is officially designated part of  
The Stray, forms an approximately U-

Harrogate, and both chalybeate  
many visitors. A number of inns  
, the Granby, the Dragon and the  
possibly earlier.<sup>[13][12]</sup>

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# Table diff

Line 300:

! style="WIDTH: 20%" | YEAR

! style="WIDTH: 20%" | %A\*

– ! style="WIDTH: 20%" | %A\*A

! style="WIDTH: 20%" | %A\*AB

|-

| 2016

| 55.7

– | 88.0

| 96.3

|-

| 2015

Line 300:

! style="WIDTH: 20%" | YEAR

! style="WIDTH: 20%" | %A\*

! style="WIDTH: 20%" | %A\*AB

|-

| 2016

| 55.7

| 96.3

|-

| 2015



# Table diff

A-Level Results: last five years<sup>[87]</sup>

YEAR	%A*	%A*A	%A*AB
2016	55.7	88.0	96.3
2015	51.3	85.6	97.6
2014	51.7	83.9	98.4
2013	50.5	88.0	97.8
2012	54.4	88.1	98.5

In addition, Westminster School graduates secure places at universities



WIKIMEDIA  
FOUNDATION

# Outline

- Introduction to visual diffs
- Why they're complicated
- Different solutions
- Our solution
- Still to do
  - Specific design
  - Specific diff computation



# Still to do

- Specific design
  - E.g. moves, comment nodes, invisible templates
- Specific diffs (everything is a tree, but not everything is best as a tree)
  - E.g. conceptually, lists are linear, tables are 2D
  - Reference diffs already specific
- Template references, etc.



# Summary

The visual diff complements the wikitext diff

Diffing is a balance between perfection and speed

The MP since 1983, Jeremy Corbyn, had his smallest majority (15.3%) in 1983 and his largest (55.6%) in 1997. In four elections during Corbyn's tenure the runners up party have been the Liberal Democrats (UK) (Liberal Democrats). The 2015 result made the seat the 26th safest of Labour's 232 seats by percentage of majority.<ref><http://www.ukpolitical.info/labour-mps-elected-2015.htm> List of Labour MPs elected in 2015 by % majority</ref> UK Political.info. Retrieved 2017-01-29.</ref>

The MP since 1983, Jeremy Corbyn, had his smallest majority (15.3%) in 1983 and his largest (60.5%) in 2017. In the eight elections during Corbyn's tenure, the Conservative Party (UK) (Conservatives) have finished in second place four times while the Liberal Democrats (UK) (Liberal Democrats) have also been runners up on four occasions. The 2015 result made the seat the 26th safest of Labour's 232 seats by percentage of majority.<ref><http://www.ukpolitical.info/labour-mps-elected-2015.htm> List of Labour MPs elected in 2015 by % majority</ref> UK Political.info. Retrieved 2017-01-29.</ref>

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