# Undo systems

(initial buffer state)

```
o (initial buffer state)
|
|
(first edit)
```

```
o (initial buffer state)
|
o (first edit)
|
o (second edit)
```

```
(initial buffer state)
(first edit)
(second edit)
(current buffer state)
```

```
(initial buffer state)
(current buffer state)
```

```
(initial buffer state)
  (new edit)
```

```
(new edit)
(discarded
 branch)
```

```
(new edit)
(discarded
 branch)
```

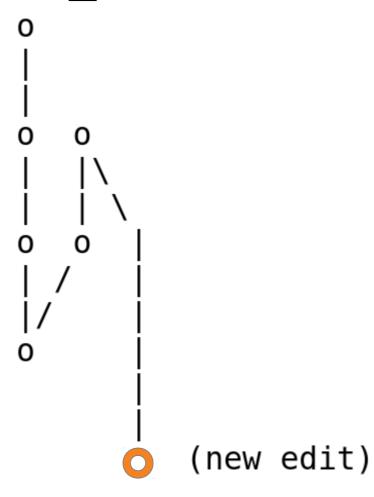
#### Linear systems \_ emacs

```
(initial buffer state)
(first edit)
(second edit)
(buffer state before undo)
(first undo)
(second undo)
```

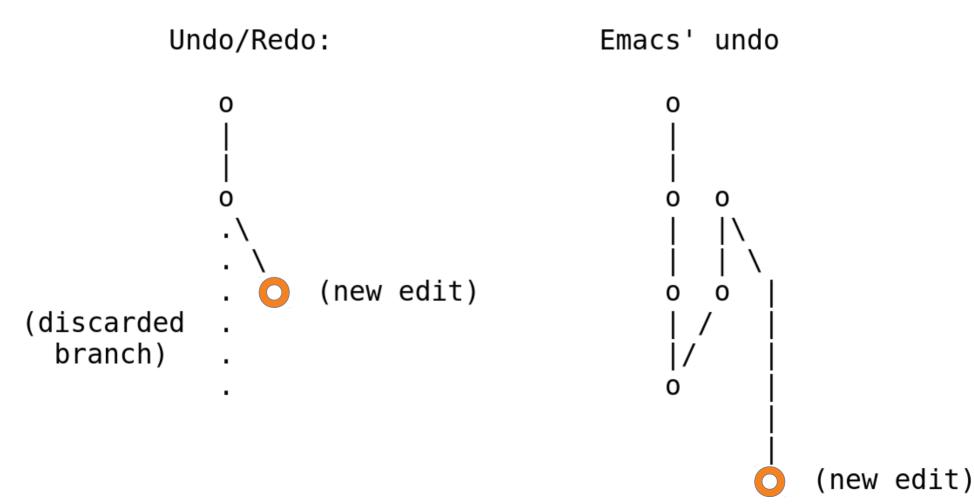
### Linear systems \_ emacs

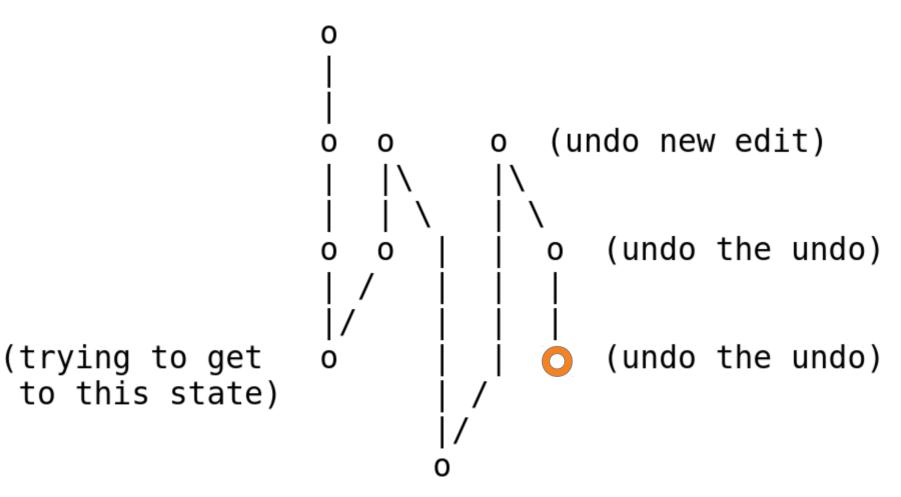
```
(initial buffer state) o
         (first edit) o (second undo)
        (second edit) o o (first undo)
                         (buffer state before undo)
```

#### Linear systems \_ emacs



## Linear systems \_ summary

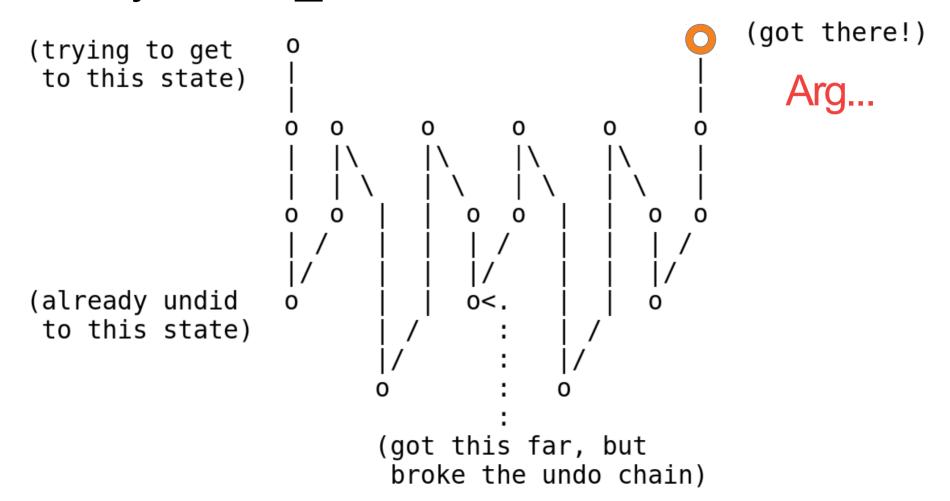




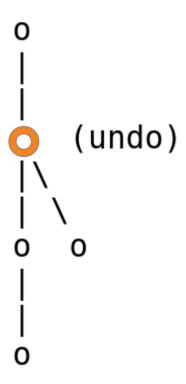
```
(got there!)
(trying to get
to this state)
                                     (keep undoing)
                                    (keep undoing)
(already undid
                                  (got this far)
to this state)
```

```
(got there!)
(trying to get
to this state)
                                     (keep undoing)
                                     (keep undoing)
                                  (got this far)
(already undid
to this state)
```

```
(got there!)
(trying to get
to this state)
(already undid
                              0<.
to this state)
                        (got this far, but
                         broke the undo chain)
```



```
(initial buffer state)
o (current state)
```



```
(undo takes you here)
(start here)
(redo takes you here)
```

```
(start here, but switch
           to the other branch)
(redo) o
(redo)
```

