

Contents

1	Title slide	slide	2
2	Fabulous outline mode	slide	2
2.1	Introduction		2
2.2	Methods		3
2.2.1	Change levels easily		3
2.2.2	Rearrange levels easily		3
2.2.3	Conclusions		3
2.2.4	Navigation is pretty sweet		3
3	Task management :sli		3
3.1	DONE prepare this talk		3
3.2	DONE give this talk		3
3.3	Checkboxes [3/3]		3
4	Task deadlines and the agenda	slide	4
4.1	TODO Finish this talk		4
4.2	TODO Publish to youtube		4
4.3	Check your agenda		4
5	Capture tasks as they come in	slide	4
6	Tags and Properties	slide	4
7	Links, links, links	slide	5
7.1	some subsection		5
8	Inline images	slide	5
9	Tables		6
9.1	Creating tables SLIDE		6
9.2	Have a table with wide columns? SLIDE		6
9.3	Sorting tables SLIDE		6
9.4	Delete and add rows and columns SLIDE		7
9.5	Convert a region to a table		7
9.6	Import a table from a data file SLIDE		7
9.7	Convert table to L ^A T _E X SLIDE		7
10	Equations	slide	8

11 Embedded code	8
11.1 Use executable code in more than one language	SLIDE . . 8
11.2 Use data in a table in code	SLIDE 9
11.3 Make your figures in your document	SLIDE 10
11.4 Write programs to your disk	SLIDE 10
11.5 Compiled languages work too - Java	SLIDE 11
11.6 C	SLIDE 11
11.7 C++	SLIDE 12
11.8 Fortran	SLIDE 12
11.9 There is much more language support	SLIDE 13
12 Export to other formats	13
12.1 Create L ^A T _E X/PDF from your org-file	SLIDE 13
12.2 Create HTML	SLIDE 14
13 Extensibility	slide 15
14 Want to try it yourself?	slide 15
15 So, why aren't you using org-mode?	slide 15
1 Title slide	slide
2 Fabulous outline mode	slide

org-mode is superb for outlining and structured text.

2.1 Introduction

Org mode is for keeping notes, maintaining TODO lists, planning projects, and authoring documents with a fast and effective plain-text system.

<http://orgmode.org>

Use TAB, and S-TAB to collapse and expand headings.

Fast navigation Put cursor at first character of headline. Use speed commands for easy navigation and action

n next visible headline p previous visible headline c cycle visibility

j jump - interesting, takes some getting used to ? see what else you can do

Or use your mouse for some of these

2.2 Methods

2.2.1 Change levels easily

Put cursor on a headline, and use M-right M-left to change the headline level

Use M-S-right and M-S-left to change all levels in subtrees

With speed commands r demote subtree l promote subtree R demote subtree and all subsubtrees L promote subtree and all subsubtrees

2.2.2 Rearrange levels easily

Put cursor on a headline, and use M-up and M-down to change the order of headlines

With speed commands U move subtree up D move subtree down

2.2.3 Conclusions

Org-mode is **very** good at outlines.

2.2.4 Navigation is pretty sweet

Put cursor here: <- Press C-c % to remember the location.

Move somewhere else to check something. Press C-c & to get back there.

3 Task management :sli

org-mode is also phenomenal for task management.

How? TODO, deadlines and the agenda.

3.1 **DONE** prepare this talk

3.2 **DONE** give this talk

3.3 Checkboxes [3/3]

- ☒ task 1
- ☒ task 2
- ☒ task 3

4 Task deadlines and the agenda slide

4.1 TODO Finish this talk

4.2 TODO Publish to youtube

It is easy to change the dates with shift-arrow keys. Put your cursor on a part of the data and use S-up and S-down to change the date.

4.3 Check your agenda

Type C-c a < a to see an agenda for this file.

With cursor at beginning of headline: < to narrow to headline v to create agenda, then press a to get TODO items with deadlines

5 Capture tasks as they come in slide

- You are working on something, maybe giving a talk
- Suddenly the phone rings, it is the President of the United States
- You want to take notes on the conversation, but you do not want to interrupt your work setup
- Capture to the rescue. Type C-c c
- select the template, fill it out, Type C-c C-c and back to work.

6 Tags and Properties slide

org-mode allows you to tag headlines, and set properties on them.

Let us see how that might be helpful

<file:///c:/users/jkitchin/Dropbox/org-mode/contacts.org>

You type C-c a m and then you can filter by tags.

Or try EMAIL={kitchin} to find an entry with an EMAIL property that matches kitchin

Speed commands Put cursor at beginning of headline / create a sparse tree based on search

7 Links, links, links

slide

places in the document: [7.1](#) or sections: **some subsection**. Good for document navigation.

files: [blog.org](#) at line 415 [blog.org functions in emacs-lisp](#) or to a headline

urls: <http://kitchingroup.cheme.cmu.edu>

Info link: [org#Hyperlinks](#)

Link to an email in gnus: nntp+news.gmane.org:gmane.emacs.orgmode#87ioo17zje.fsf@ericabrahamsen.net

Citations: [?] or [10.1021/am4059149](#)

? ? ?

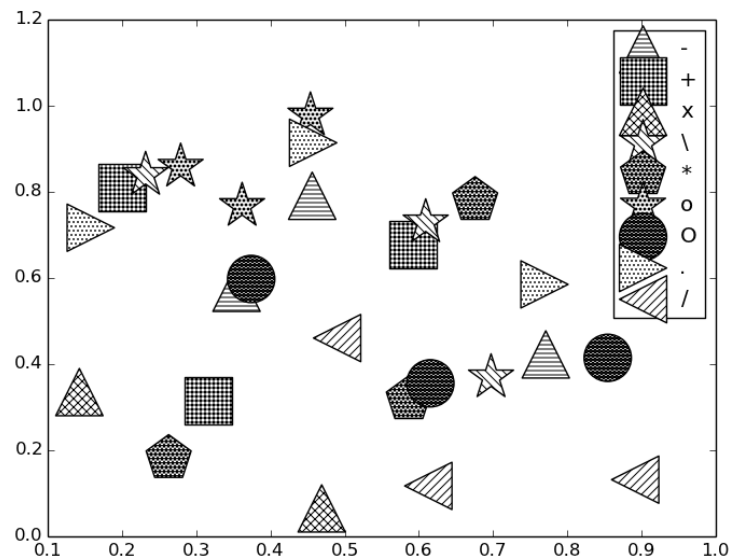
7.1 some subsection

This is called a "radio target" . You can make links to them to jump around quickly.

8 Inline images

slide

You can have images inline, and see them.



9 Tables

9.1 Creating tables

slide

So easy. Start with `|` at the beginning of a line.

x	y
12	34
2	4
jfds	fjkdsla
3	8
a	ffjdkslafjksdlafjksdla;

Move around and realign your table with `TAB` and `S-TAB`,

9.2 Have a table with wide columns?

slide

number	text
0	A very long sentence that takes up space
1	a short one

Shorten the column for readability with `<n>`. Want numbers left justified? use `<l>`

number	text
0	A very long sentence that takes up space
1	a short one

9.3 Sorting tables

slide

`org-table-sort-lines`, alphabetically, or numerically , in ascending or descending order.

If you do that a lot, remember `C-c ^`

x	y
9	8
4	2
2	7
1	2

Don't forget `M`-arrows to move rows and columns around!

9.4 Delete and add rows and columns

slide

org-table-insert-row M-S-down org-table-kill-row M-S-up org-table-insert-column M-S-right org-table-delete-column M-S-left

x	y
test	2
John	2
Erin	7
Andy	2
Zoe	1

9.5 Convert a region to a table

Have a csv dataset you want to convert to a table: Select it and run M-x org-table-convert-region.

If you do this a lot, remember C-c |

And you can add a horizontal line below your cursor with C-c -

x, y 1, 3 3, 4 5, 6 7, 8 8, 9

Need to know the sum of a column? Run C-c + on the column, and check the minibuffer. Paste it somewhere with C-y.

9.6 Import a table from a data file

slide

See this file [data.tab](#)

Run M-x org-table-import to insert it here.

x	y
1	2
4	2
2	7
9	8

C-c - to get that line.

9.7 Convert table to L^AT_EX

slide

Need a quick way to convert a table to L^AT_EX code?

Highlight the region and run C-c C-e C-b l L to get the L^AT_EX code

x	y
John	2
Erin	7
Andy	2
Zoe	1

Want HTML instead? C-c C-e C-b h H

10 Equations

slide

You can put equations in your documents: $\int_0^x \sin x = 0.5$. Solve for x .

Show the equation code: C-c C-c

Toggle them as images: [org-preview-latex-fragment](#) or C-c C-x C-l

Use symbols like ∞ , or α , with superscripts like x^2 or subscripts like CH_4 .

Toggle symbol overlays like this:

[org-toggle-pretty-entities](#)

e^x

11 Embedded code

11.1 Use executable code in more than one language

slide

describing how to add two numbers

$e^x = 5$

```
1 print 7 + 7
```

14

```
1 (+ 7 7)
```

14

```
1 sum(c(6, 7))
```

[1] 13

```
1 print 6 + 69
```

75

```
1 print 6 + 69
```

75

```
1 % Only on Mac and Linux.
```

What, you want inline code? You mean show that $2 + 2 = 4$. Maybe you prefer inline python: 4.

Check out how that exports.

11.2 Use data in a table in code

slide

Tables in org-mode are sources of data. Give a table a name.

x	y
Erin	7
John	2
Andy	2
Zoe	1
fred	5
long-nmae	7

Use it as a variable in a code block

```
1 print data[0]
2
3 import matplotlib.pyplot as plt
4 plt.plot([int(x[1]) for x in data])
5 plt.show()
```

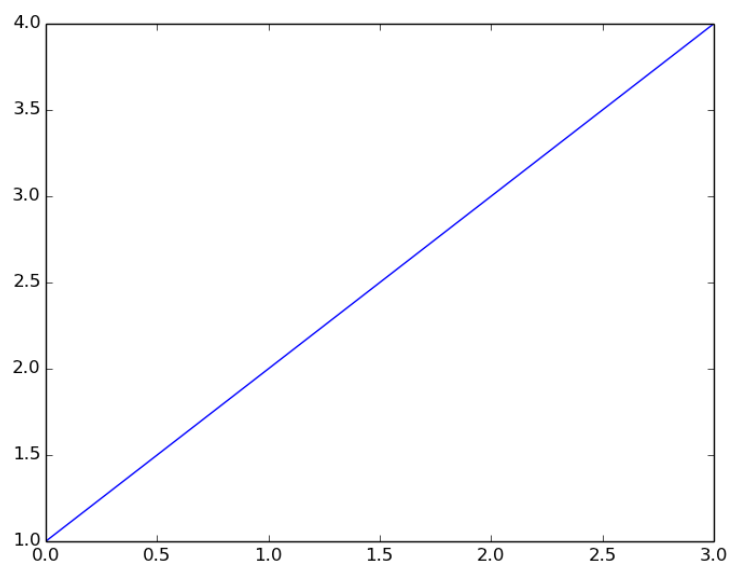
['Erin', 7]

We might as well as make a link back to our table `??`. Go ahead, click on it.

11.3 Make your figures in your document

slide

```
1 import matplotlib.pyplot as plt
2
3 plt.plot([1,2,3,4])
4 plt.savefig('images/silly-plot.png')
```



You can toggle inline images if you do want to see them: [org-toggle-inline-images](#)

11.4 Write programs to your disk

slide

```
1 print "Hello world"
```

Tangle the file: [org-babel-tangle](#)
Now, run it:

```
1 python hello_world.py
```

Hello world

check out the file: [hello_world.py](#)

11.5 Compiled languages work too - Java

slide

```
1 public class hello {  
2  
3     public static void main(String[] args) {  
4         System.out.println("Hello, World from java");  
5     }  
6 }
```

Tangle the file

```
1 (org-babel-tangle)
```

hello.java

Compile it:

```
1 javac hello.java
```

Now, run the code.

```
1 java hello
```

Hello, World from java

11.6 C

slide

```
1 //C hello world example  
2 #include <stdio.h>  
3  
4 int main()  
5 {  
6     printf("Hello world from C\n");  
7     return 0;  
8 }
```

```
1 (org-babel-tangle)
```

hello.c

Compile:

```
1 gcc hello.c -o hello
```

```
1 ./hello
```

Hello world from C

11.7 C++

slide

```
1  #include <iostream>
2
3  main()
4  {
5      std::cout << "Hello World++! ";
6  }
```

You can also tangle a Makefile.

```
1  hello:      hello.c++
2      g++ hello.c++ -o a.out
```

Now, we tangle the code out to the files.

```
1  (org-babel-tangle)
```

Next, we run make with the target to compile the code. You could also simply write the compiler command here.

```
1  make hello
```

```
g++ hello.c++ -o a.out
```

And now get the output by running the program.

```
1  ./a.out
```

```
Hello World++!
```

11.8 Fortran

slide

```
1  program hello
2      print *, "Hello World from Fortran!"
3  end program hello
```

Tangle the file

```
1  (org-babel-tangle)
```

hello.f90

Compile the program

```
1 gfortran hello.f90 -o hello-fortran
```

Run the program.

```
1 ./hello-fortran
```

Hello World from Fortran!

11.9 There is much more language support slide

The support for editable, executable code blocks is large, and growing.

```
1 (directory-files "../../kitchingroup/jmax/org-mode-bleeding-edge/lisp" nil "ob-[^.]*\\.el\\b")
```

ob-C.el ob-R.el ob-asymptote.el ob-awk.el ob-calc.el ob-clojure.el ob-comint.el ob-core.el

12 Export to other formats

12.1 Create \LaTeX /PDF from your org-file slide

see file:///c:/users/jkitchin/Dropbox/CMU/manuscripts/03-CuPd_paper/manuscript.org

Gets converted to:

//c:/users/jkitchin/Dropbox/CMU/manuscripts/03-CuPd\unhbox \v

__paper/manuscript.pdf

12.2 Create HTML

slide

We can launch this in a browser. Of course you can have *italics*, **bold**, underlined, **verbatim**, and **code**.

Consider this code block:

```
1 a = [1, 2, 3, 4]
2 b = [x**2 for x in a]
3
4 print b
```

That roughly is how <http://kitchingroup.cheme.cmu.edu> is made. We write an org-file, and export it to the blog html format.

Try it: C-c C-e h o.

13 Extensibility

slide

org-mode is a testament to extensibility. Checkout the [contrib](#) directory for some inspiration.

14 Want to try it yourself?

slide

Start out with <http://github.com/jkitchin/jmax>

It is pre-configured to do most of what you saw here today. For windows has a prebuilt Emacs to get started with. You have to install L^AT_EX, python, and other languages if you are going to use them.

There are other options out there too:

I have used both of these in the past.

- Prelude <https://github.com/bbatsov/prelude>
- Emacs-starter-kit <http://eschulte.github.io/emacs24-starter-kit/>

Recap: `(progn(widen)(require'org-toc)(org-toc-show))`

15 So, why aren't you using org-mode?

slide