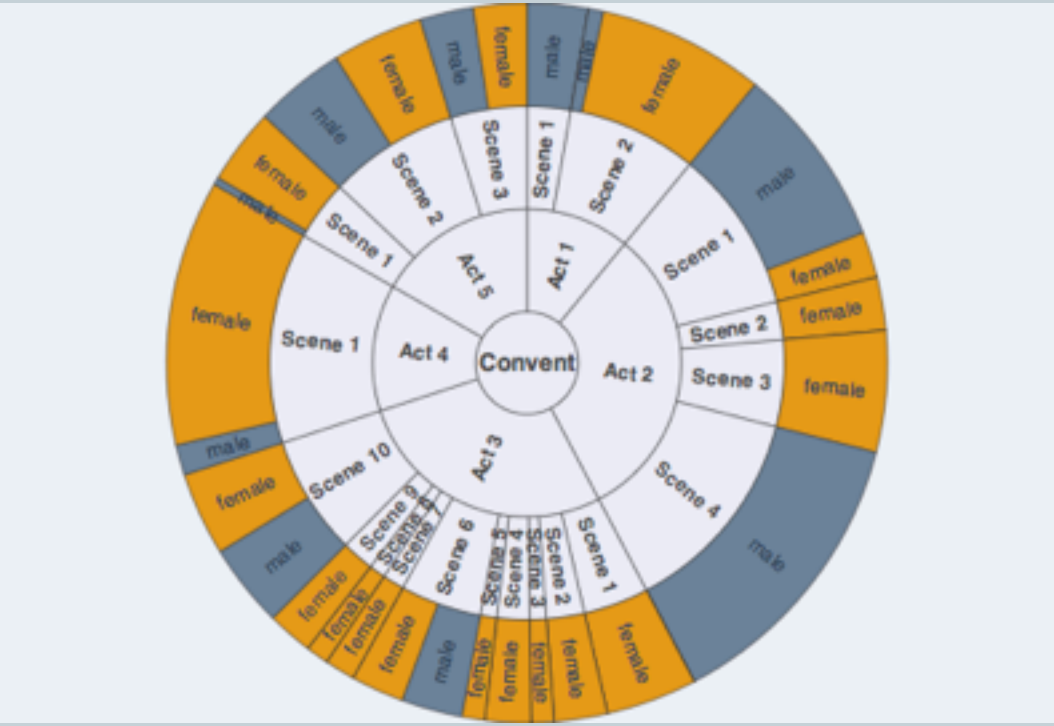
Workshop Overview



Goals

- This course will introduce students to cutting edge ways of structuring and analyzing digitized text-as-data, and will do so by exploring questions fundamental to the humanities.
- Topics Covered
  - Principles of Natural Language Processing
  - Introduction to Python for NLP
  - Discriminating Words
  - Dictionary Methods
  - Textual Classification
  - Word Embedding
- Give time for you to apply what your learn to your own corpus.

Two Goals

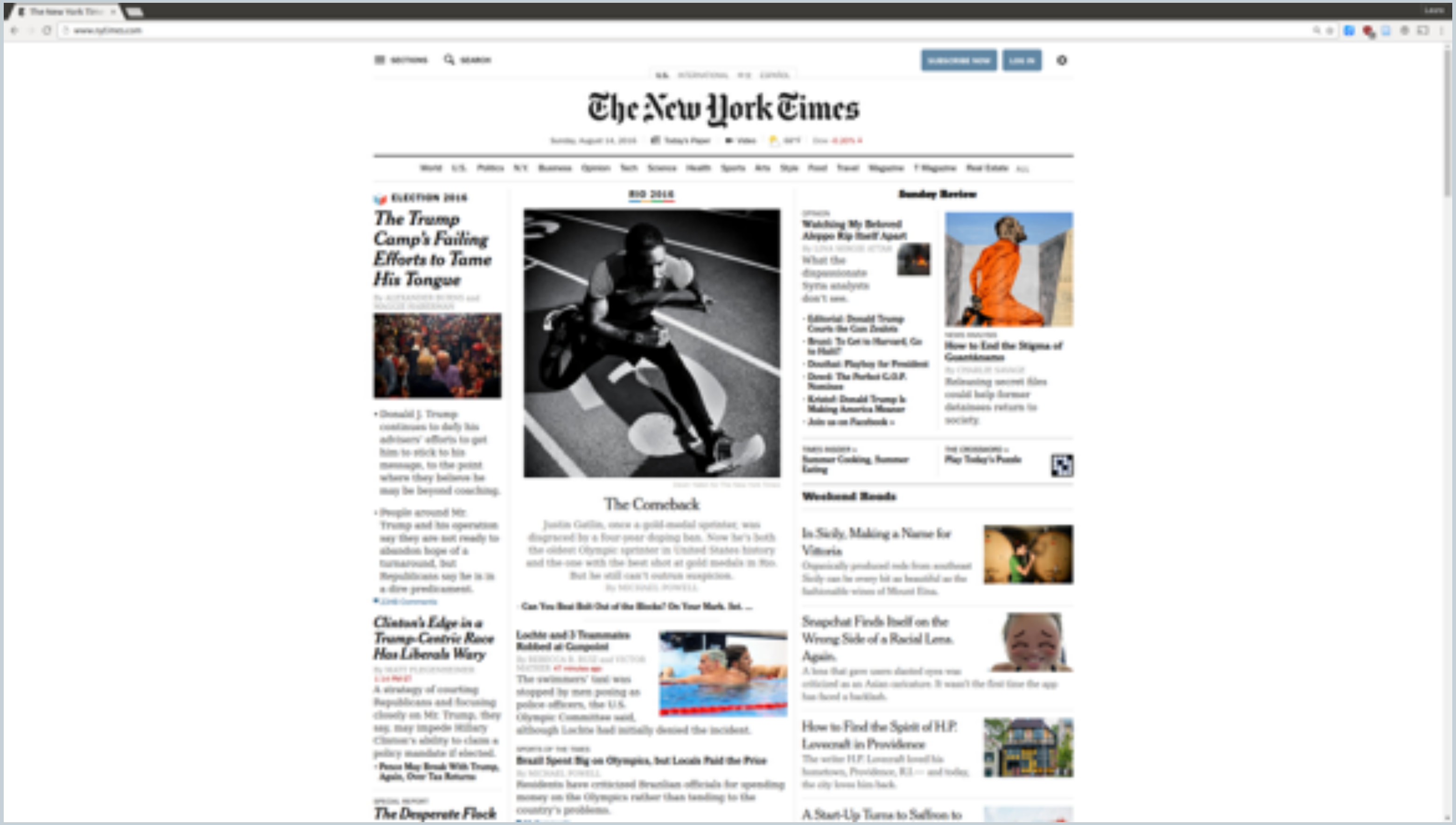
- Intuition about what computational text analysis entails
  - What types of questions can you answer?
  - What types of evidence does it produce?
  - Range of techniques available
- Practical tools for implementing techniques
  - Understanding Python
  - Working scripts for specific techniques
  - How to learn on your own

Introduction: Text Formats

To analyze text, we need to move away from word processing and pdfs. What does this mean?

Text Formats

- The way we read text: easy on the eyes



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ELECTION 2016

The Trump Camp's Failing Efforts to Tame His Tongue

By ALEXANDER BURNS and MAGGIE HABERMAN

- Donald J. Trump continues to defy his advisers' efforts to get him to stick to his message, to the point where they believe he may be beyond coaching.
- People around Mr. Trump and his operation say they are not ready to abandon hope of a turnaround, but Republicans say he is in a dire predicament.

Clinton's Edge in a Trump-Centric Race Has Liberals Wary

A strategy of courting Republicans and focusing closely on Mr. Trump, they say, may impede Hillary Clinton's ability to claim a policy mandate if elected.

- Pence May Break With Trump, Again, Over Tax Returns

SPECIAL REPORT

The Desperate Flock

RIO 2016

The Comeback

Justin Gatlin, once a gold-medal sprinter, was disgraced by a four-year doping ban. Now he's both the oldest Olympic sprinter in United States history and the one with the best shot at gold medals in Rio. But he still can't outrun suspicion.

By MICHAEL POWELL

- Can You Beat Bolt Out of the Blocks? On Your Mark. Set. ...

Lochte and 3 Teammates Robbed at Gunpoint

The swimmers' taxi was stopped by men posing as police officers, the U.S. Olympic Committee said, although Lochte had initially denied the incident.

Brazil Spent Big on Olympics, but Locals Paid the Price

By MICHAEL POWELL

Residents have criticized Brazilian officials for spending money on the Olympics rather than tending to the country's problems.

Sunday Review

OPINION

Watching My Beloved Aleppo Rip Itself Apart

What the dispassionate Syria analysts don't see.

- Editorial: Donald Trump Courts the Gun Zealots
- Bruni: To Get to Harvard, Go to Haiti?
- Douthat: Playbox for President
- Dowd: The Perfect G.O.P. Nominee
- Kristof: Donald Trump Is Making America Meaner
- Join us on Facebook »

NEWS ANALYSIS

How to End the Stigma of Guantánamo

By CHARLIE SAVAGE

Releasing secret files could help former detainees return to society.

TIMES INSIDER »

Summer Cooking, Summer Eating

THE CROSSWORD »

Play Today's Puzzle

Weekend Reads

In Sicily, Making a Name for Vittoria

Organically produced reds from southeast Sicily can be every bit as beautiful as the fashionable wines of Mount Etna.

Snapchat Finds Itself on the Wrong Side of a Racial Lens. Again.

A lens that gave users slanted eyes was criticized as an Asian caricature. It wasn't the first time the app has faced a backlash.

How to Find the Spirit of H.P. Lovecraft in Providence

The writer H.P. Lovecraft loved his hometown, Providence, R.I. — and today, the city loves him back.

A Start-Up Turns to Saffron to

Text Formats

- The way computers read text: everything must be uniquely identified (e.g. html).

Text Formats

- This week we'll cover two text formats:
  - Raw text, or .txt
  - Delimiter-separated files, or .csv

Word (Processed) Text

A Highbrow Essay on Woman:
A Dissertation on the Economic Function of Woman with the part played therein by scientific bulletins and deep thinkers.

By Eugene Wood

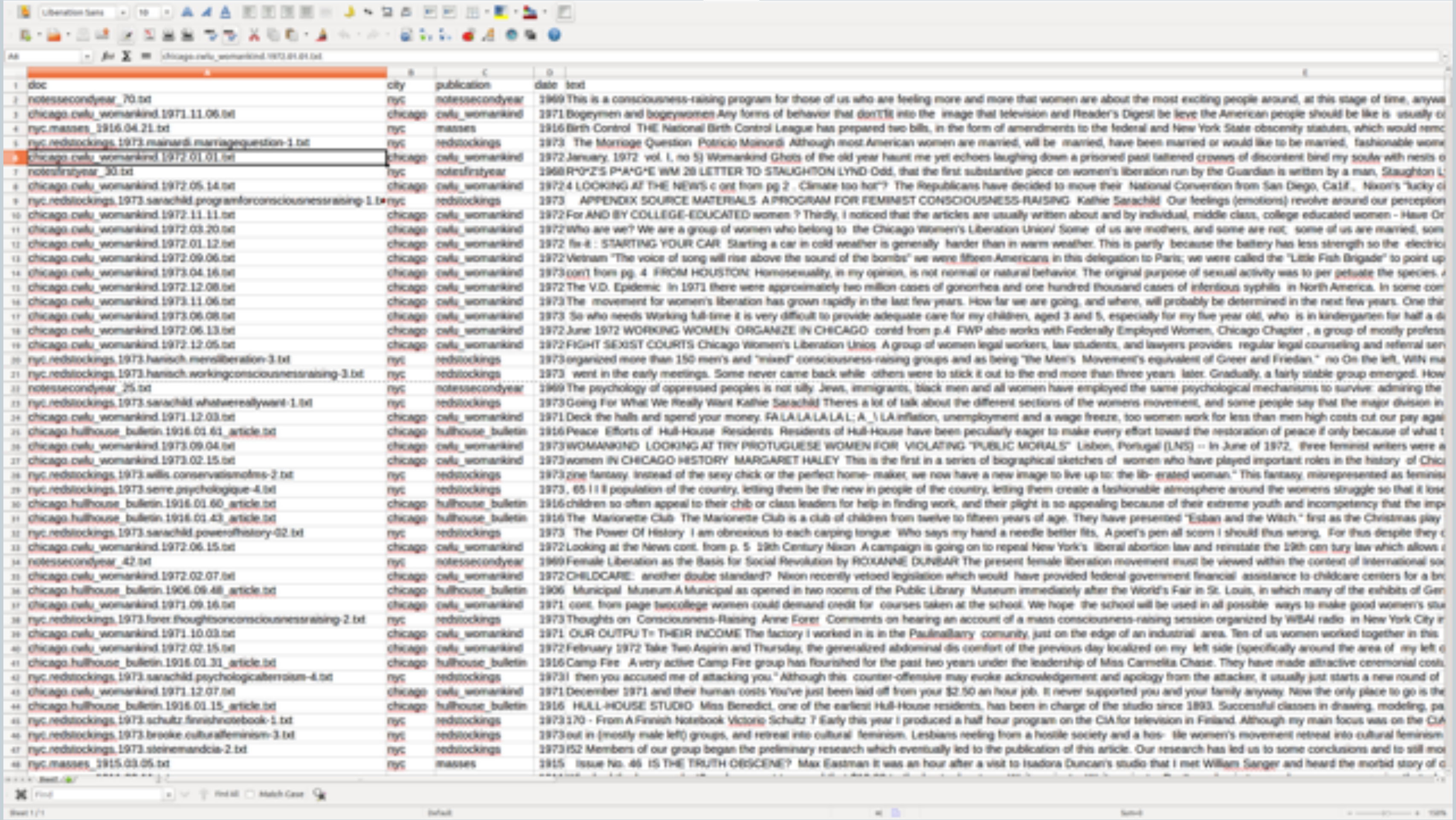
If there is any one thing in the reading line that I dote upon more than another, it is a bulletin, a real scientific bulletin, whether it be on the Stomach Contents of Arctomys Miurus or The Method of Procedure in Making Salt-rising Bread. Those fellows go at it so thoroughly. Right up to the handle. They don't have to worry whether the editor will like it or not. They don't care whether it will hit the public or not. If anything, they'd a little rather it didn't. It can't be very scientific if people read it and enjoy it. They aren't like literary folks, who when they take hold of a subject must not do more than pull out a few of the prettiest tail-feathers.

They pluck the subject as bare as a teacup. And then they take the hide off it. And then they cut it open and have a look at its insides, and dissect away every muscle from every bone, so that when they get all through, and washed up, that subject hasn't one secret left. They know it backwards and forwards, lengthwise and crosswise, up and down, and outside and inside.

Raw Text (.txt)

- A Highbrow Essay on Woman:\n A Dissertation on the Economic Function of Woman with the part played therein by scientific bulletins and deep thinkers. \nIf there is any one thing in the reading line that I dote upon more than another, it is a bulletin, a real scientific bulletin, whether it be on the Stomach Contents of Arctomys Miurus or The Method of Procedure in Making Salt-rising Bread. Those fellows go at it so thoroughly. Right up to the handle. They don't have to worry whether the editor will like it or not. They don't care whether it will hit the public or not. If anything, they'd a little rather it didn't. It can't be very scientific if people read it and enjoy it. They aren't like literary folks, who when they take hold of a subject must not do more than pull out a few of the prettiest tail-feathers.\n\tThey pluck the subject as bare as a teacup. And then they take the hide off it. And then they cut it open and have a look at its insides, and dissect away every muscle from every bone, so that when they get all through, and washed up, that subject hasn't one secret left. They know it backwards and forwards, lengthwise and crosswise, up and down, and outside and inside.\nSo when I received a few days ago a Teachers' College Bulletin on "The Economic Function of Woman," by Edward T. Devine, PhD, Professor of Social Economy of Columbia University, I just knocked off work on that hurry job I had, part of the pay for which is going to reward the insurance company for my not dying this year, and settled myself to a really enjoyable intellectual sozzle. Here was something that nobody else could ever read clear through unless he was paid for it or had to read it in order to get a term-standing. And I'm interested in Woman. Most men are, if you'll notice. More or less. It is a subject that is brought to the male attention so often, so very often when you consider the whole period from the cradle to the grave. And then, again, this seemed a particularly promising viewpoint from which to consider Woman, what, if any account, is she?\nThere is not an extended piece of writing, however foolish it may seem, from which it is entirely impossible to get one good idea. And I will say for Dr. Devine that he sets forth some very sound and sensible things. I am sure of this because they're exactly what I think. When he says that students of the economic processes haven't paid as much attention to Consuming as they have to Producing, I think he's quite right. (I want the printer and the editor to let these capital letters stand as they are because I want to give the impression that I am a Deep Thinker. Nobody can be a Deep Thinker without capital letters sticking up through his copy like bristles on a cucumber. If I can't have any other symptoms of a Deep Thinker than Capital Letters, I must have them.)

Excel (Processed) File



chicago.cwlu_womankind.1972.01.01.txt

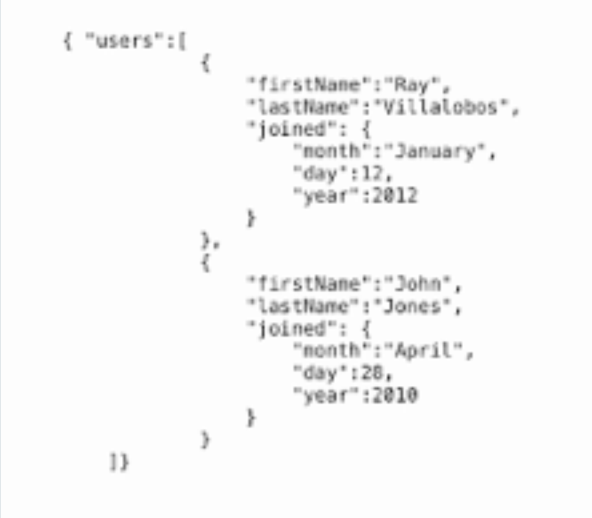
doc	city	publication	date	text
notessecondyear_70.txt	nyc	notessecondyear	1969	This is a consciousness-raising program for those of us who are feeling more and more that women are about the most exciting people around, at this stage of time, anywa
chicago.cwlu_womankind.1971.11.06.txt	chicago	cwlu_womankind	1971	Bogeymen and bogeywomen Any forms of behavior that don'Tfit into the image that television and Reader's Digest be lieve the American people should be like is usually c
nyc.masses_1916.04.21.txt	nyc	masses	1916	Birth Control THE National Birth Control League has prepared two bills, in the form of amendments to the federal and New York State obscenity statutes, which would remo
nyc.redstockings.1973.mainardi.marriagequestion-1.txt	nyc	redstockings	1973	The Morriage Question Potricio Moinordi Although most American women are married, will be married, have been married or would like to be married, fashionable wome
chicago.cwlu_womankind.1972.01.01.txt	chicago	cwlu_womankind	1972	January, 1972 vol. I, no 5) Womankind Ghots of the old year haunt me yet echoes laughing down a prisoned past tattered crowws of discontent bind my soulw with nests o
notesfirstyear_30.txt	nyc	notesfirstyear	1968	R*0*Z'S P*A*G*E WM 28 LETTER TO STAUGHTON LYND Odd, that the first substantive piece on women's liberation run by the Guardian is written by a man, Staughton L
chicago.cwlu_womankind.1972.05.14.txt	chicago	cwlu_womankind	1972	4 LOOKING AT THE NEWS c ont from pg 2 . Climate too hot"? The Republicans have decided to move their National Convention from San Diego, Ca1if., Nixon's "lucky ci
nyc.redstockings.1973.sarachild.programforconsciousnessraising-1.t	nyc	redstockings	1973	APPENDIX SOURCE MATERIALS A PROGRAM FOR FEMINIST CONSCIOUSNESS-RAISING Kathie Sarachild Our feelings (emotions) revolve around our perception
chicago.cwlu_womankind.1972.11.11.txt	chicago	cwlu_womankind	1972	For AND BY COLLEGE-EDUCATED women ? Thirdly, I noticed that the articles are usually written about and by individual, middle class, college educated women - Have Or
chicago.cwlu_womankind.1972.03.20.txt	chicago	cwlu_womankind	1972	Who are we? We are a group of women who belong to the Chicago Women's Liberation Union/ Some of us are mothers, and some are not; some of us are married, som
chicago.cwlu_womankind.1972.01.12.txt	chicago	cwlu_womankind	1972	fix-it : STARTING YOUR CAR Starting a car in cold weather is generally harder than in warm weather. This is partly because the battery has less strength so the electric
chicago.cwlu_womankind.1972.09.06.txt	chicago	cwlu_womankind	1972	Vietnam "The voice of song will rise above the sound of the bombs" we were fifteen Americans in this delegation to Paris; we were called the "Little Fish Brigade" to point up
chicago.cwlu_womankind.1973.04.16.txt	chicago	cwlu_womankind	1973	con't from pg. 4 FROM HOUSTON: Homosexuality, in my opinion, is not normal or natural behavior. The original purpose of sexual activity was to per petuate the species.
chicago.cwlu_womankind.1972.12.08.txt	chicago	cwlu_womankind	1972	The V.D. Epidemic In 1971 there were approximately two million cases of gonorrhea and one hundred thousand cases of infentious syphilis in North America. In some com
chicago.cwlu_womankind.1973.11.06.txt	chicago	cwlu_womankind	1973	The movement for women's liberation has grown rapidly in the last few years. How far we are going, and where, will probably be determined in the next few years. One thi
chicago.cwlu_womankind.1973.06.08.txt	chicago	cwlu_womankind	1973	So who needs Working full-time it is very difficult to provide adequate care for my children, aged 3 and 5, especially for my five year old, who is in kindergarten for half a da
chicago.cwlu_womankind.1972.06.13.txt	chicago	cwlu_womankind	1972	June 1972 WORKING WOMEN ORGANIZE IN CHICAGO contd from p.4 FWP also works with Federally Employed Women, Chicago Chapter , a group of mostly profess
chicago.cwlu_womankind.1972.12.05.txt	chicago	cwlu_womankind	1972	FIGHT SEXIST COURTS Chicago Women's Liberation Unios A group of women legal workers, law students, and lawyers provides regular legal counseling and referral serv
nyc.redstockings.1973.hanisch.mensliberation-3.txt	nyc	redstockings	1973	organized more than 150 men's and "mixed" consciousness-raising groups and as being "the Men's Movement's equivalent of Greer and Friedan." no On the left, WIN ma
nyc.redstockings.1973.hanisch.workingconsciousnessraising-3.txt	nyc	redstockings	1973	went in the early meetings. Some never came back while others were to stick it out to the end more than three years later. Gradually, a fairly stable group emerged. How
notessecondyear_25.txt	nyc	notessecondyear	1969	The psychology of oppressed peoples is not silly. Jews, immigrants, black men and all women have employed the same psychological mechanisms to survive: admiring the
nyc.redstockings.1973.sarachild.whatwereallywant-1.txt	nyc	redstockings	1973	Going For What We Really Want Kathie Sarachild Theres a lot of talk about the different sections of the womens movement, and some people say that the major division in
chicago.cwlu_womankind.1971.12.03.txt	chicago	cwlu_womankind	1971	Deck the halls and spend your money. FA LA LA LA LA LA L; A_\ LA inflation, unemployment and a wage freeze, too women work for less than men high costs cut our pay agai
chicago.hullhouse_bulletin.1916.01.61_article.txt	chicago	hullhouse_bulletin	1916	Peace Efforts of Hull-House Residents Residents of Hull-House have been peculiarly eager to make every effort toward the restoration of peace if only because of what t
chicago.cwlu_womankind.1973.09.04.txt	chicago	cwlu_womankind	1973	WOMANKIND LOOKING AT TRY PROTUGUESE WOMEN FOR VIOLATING "PUBLIC MORALS" Lisbon, Portugal (LNS) -- In June of 1972, three feminist writers were a
chicago.cwlu_womankind.1973.02.15.txt	chicago	cwlu_womankind	1973	women IN CHICAGO HISTORY MARGARET HALEY This is the first in a series of biographical sketches of women who have played important roles in the history of Chica
nyc.redstockings.1973.willis.conservatismofms-2.txt	nyc	redstockings	1973	zine fantasy. Instead of the sexy chick or the perfect home- maker, we now have a new image to live up to: the lib- erated woman." This fantasy, misrepresented as feminis
nyc.redstockings.1973.serre.psychologique-4.txt	nyc	redstockings	1973	, 65 ! I ll population of the country, letting them be the new in people of the country, letting them create a fashionable atmosphere around the womens struggle so that it lose
chicago.hullhouse_bulletin.1916.01.60_article.txt	chicago	hullhouse_bulletin	1916	children so often appeal to their chib or class leaders for help in finding work, and their plight is so appealing because of their extreme youth and incompetency that the impe
chicago.hullhouse_bulletin.1916.01.43_article.txt	chicago	hullhouse_bulletin	1916	The Marionette Club The Marionette Club is a club of children from twelve to fifteen years of age. They have presented "Esban and the Witch." first as the Christmas play
nyc.redstockings.1973.sarachild.powerofhistory-02.txt	nyc	redstockings	1973	The Power Of History I am obnoxious to each carping tongue Who says my hand a needle better fits, A poet's pen all scorn I should thus wrong, For thus despite they c
chicago.cwlu_womankind.1972.06.15.txt	chicago	cwlu_womankind	1972	Looking at the News cont. from p. 5 19th Century Nixon A campaign is going on to repeal New York's liberal abortion law and reinstate the 19th cen tury law which allows a
notessecondyear_42.txt	nyc	notessecondyear	1969	Female Liberation as the Basis for Social Revolution by ROXANNE DUNBAR The present female liberation movement must be viewed within the context of international soc
chicago.cwlu_womankind.1972.02.07.txt	chicago	cwlu_womankind	1972	CHILDCARE: another doube standard? Nixon recently vetoed legislation which would have provided federal government financial assistance to childcare centers for a bro
chicago.hullhouse_bulletin.1906.09.48_article.txt	chicago	hullhouse_bulletin	1906	Municipal Museum A Municipal as opened in two rooms of the Public Library Museum immediately after the World's Fair in St. Louis, in which many of the exhibits of Ger
chicago.cwlu_womankind.1971.09.16.txt	chicago	cwlu_womankind	1971	cont. from page twocollege women could demand credit for courses taken at the school. We hope the school will be used in all possible ways to make good women's stu
nyc.redstockings.1973.forer.thoughtsonconsciousnessraising-2.txt	nyc	redstockings	1973	Thoughts on Consciousness-Raising Anne Forer Comments on hearing an account of a mass consciousness-raising session organized by WBAI radio in New York City ir
chicago.cwlu_womankind.1971.10.03.txt	chicago	cwlu_womankind	1971	OUR OUTPU T= THEIR INCOME The factory I worked in is in the PaulinaBarry comunity, just on the edge of an industrial area. Ten of us women worked together in this
chicago.cwlu_womankind.1972.02.15.txt	chicago	cwlu_womankind	1972	February 1972 Take Two Aspirin and Thursday, the generalized abdominal dis comfort of the previous day localized on my left side (specifically around the area of my left o
chicago.hullhouse_bulletin.1916.01.31_article.txt	chicago	hullhouse_bulletin	1916	Camp Fire A very active Camp Fire group has flourished for the past two years under the leadership of Miss Carmelita Chase. They have made attractive ceremonial costu
nyc.redstockings.1973.sarachild.psychologicalterroism-4.txt	nyc	redstockings	1973	I then you accused me of attacking you." Although this counter-offensive may evoke acknowledgement and apology from the attacker, it usually just starts a new round of
chicago.cwlu_womankind.1971.12.07.txt	chicago	cwlu_womankind	1971	December 1971 and their human costs You've just been laid off from your $2.50 an hour job. It never supported you and your family anyway. Now the only place to go is the
chicago.hullhouse_bulletin.1916.01.15_article.txt	chicago	hullhouse_bulletin	1916	HULL-HOUSE STUDIO Miss Benedict, one of the earliest Hull-House residents, has been in charge of the studio since 1893. Successful classes in drawing, modeling, pa
nyc.redstockings.1973.schultz.finnishnotebook-1.txt	nyc	redstockings	1973	170 - From A Finnish Notebook Victorio Schultz 7 Early this year I produced a half hour program on the CIA for television in Finland. Although my main focus was on the CIA
nyc.redstockings.1973.brooke.culturalfeminism-3.txt	nyc	redstockings	1973	out in (mostly male left) groups, and retreat into cultural feminism. Lesbians reeling from a hostile society and a hos- tile women's movement retreat into cultural feminism
nyc.redstockings.1973.steinemandcia-2.txt	nyc	redstockings	1973	I52 Members of our group began the preliminary research which eventually led to the publication of this article. Our research has led us to some conclusions and to still mor
nyc.masses_1915.03.05.txt	nyc	masses	1915	Issue No. 46 IS THE TRUTH OBSCENE? Max Eastman It was an hour after a visit to Isadora Duncan's studio that I met William Sanger and heard the morbid story of c

.csv

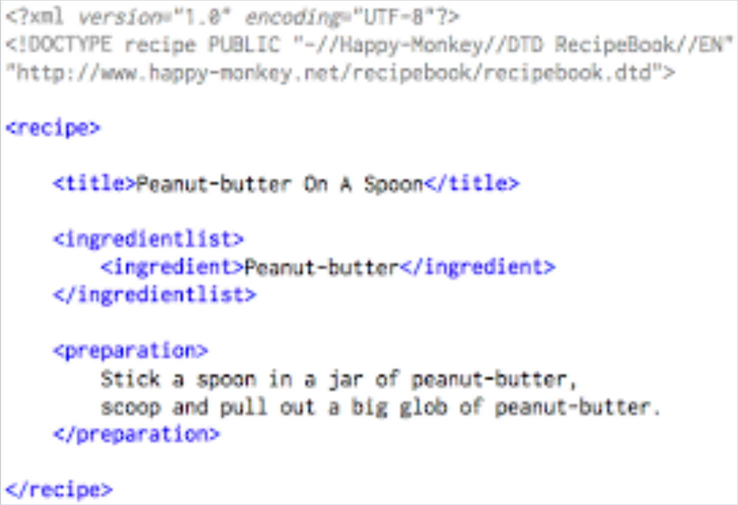
```
doc    city    publication    date    text    word_count    org    identifier    wave
notessecondyear_70.txt  nyc    notessecondyear 1969    "This is a consciousness-raising program for those of us who are feeling more and more that
women are about the most exciting people around, at this stage of time, anyway, and that the seeds of a new and beautiful world' society lie buried in
the consciousness of this very class which has been abused and oppressed since the beginning of human history.  It is a program planned on the
assumption that a mass liberation movement will develop as more and more women begin to perceive their situation correctly and that, therefore, our
primary task right now is to awaken '.class"" consciousness in ourselves and others on a mass scale.  The following outline is just one hunch of what a
theory of mass consciousness-raising would look like in skeleton form.   I.    The ""bitch session"" cell group  A.    Ongoing consciousness expansion  1.
Personal   recognition and testimony  a.    Recalling and sharing our bitter experiences  b.    Expressing our feelings about our experiences both at the
time they occurred and at present  c.    Expressing our feelings about ourselves, men, other women  d.    Evaluating our feelings  2. Personal
testimony - methods of group practice  a.    Going around the room with key questions on key topics  b.    Speaking our experience - at random  c.
Cross examination  3. Relating   and generalizing individual testimony  a.    Finding the common root when different women have opposite feelings
and experiences  b.    Examining the negative and positive aspects of each woman's feelings and her way of dealing with her situation as a woman  B.
Classic forms of resisting consciousness, or: How to avoid facing the awful truth  1.    Anti-womanism  2.    Glorification of the oppressor  3.    Excusing
the oppressor (and feeling sorry for him)  4.    False identification with the oppressor and other socially privileged groups  5.    Shunning identification
with one's own oppressed group and other oppressed groups  6.       Romantic fantasies, utopian thinking and other forrns of confusing present reality
with what one wishes reality to be                    7.    Thinking one has power in the traditional role-can ""get what one wants,""                    has
power behind the throne. etc.             8.    Belief that one has found an adequate personal solution or will be able to                find one without large
social changes             9.    Self-cultivation, rugged individualism, seclusion, and other forms of go-it-alonism                10.    Self-blame!!           11.
Ultra-militancy; and others??             C.    Recognizing the survival reasons for resisting consciousness             D.    ""Starting to Stop"" - overcoming
repressions and delusions            1.    Daring to see, or: Taking off the rose-colored glasses          a.. Reasons for repressing one's own consciousness
1)  Fear of feeling the full weight of one's painful situation        2)  Fear of feeling one's past wasted and meaningless (plus wanting others to go
through the same obstacles)        3)  Fear of despair for the future                          b.            Analyzing which fears are valid and which invalid        1)
Examining the objective conditions in one's own past and in the lives of most women throughout History        2)  Examining objective conditions for
thepresent                              " 553    redstockings   1     2
```

Other formats (we won’t cover)

- html, json, xml, pickel



```json
{ "users":[
            {
                "firstName":"Ray",
                "lastName":"Villalobos",
                "joined": {
                    "month":"January",
                    "day":12,
                    "year":2012
                }
            },
            {
                "firstName":"John",
                "lastName":"Jones",
                "joined": {
                    "month":"April",
                    "day":28,
                    "year":2010
                }
            }
    ]}
```



```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE recipe PUBLIC "-//Happy-Monkey//DTD RecipeBook//EN"
"http://www.happy-monkey.net/recipebook/recipebook.dtd">

<recipe>

    <title>Peanut-butter On A Spoon</title>

    <ingredientlist>
        <ingredient>Peanut-butter</ingredient>
    </ingredientlist>

    <preparation>
        Stick a spoon in a jar of peanut-butter,
        scoop and pull out a big glob of peanut-butter.
    </preparation>

</recipe>
```

Warning!

When creating your own corpus:

Do not save text in .doc, .docx, .rtf, .xls, or pdf formats

Provided Corpuses (aka: Corpora)

- Literary:
  - txtLab 450: a novel per year for 150 years in 3 languages
  - Underwood/Sellers: 750 volumes of C19 poetry, canon/archive
  - Shakespeare's Plays — stripped of stage directions and metatext
  - Children's Literature: C19 Britain
- Music Reviews:
  - From metacritic.com, 1990-2015
  - First paragraph from professional reviews (versus user reviews)
  - Random sample of 5000 reviews from ~171,000 reviews
  - Includes metadata on release date, artist, album, reviewer, and genre
  - Stored in .csv format
- If you have one, we hope you can try these lessons on your own corpus!

Workshop Schedule

- Monday Afternoon: Jump Right In with an introduction to NLP
  - Introduction to the way computers “read” text
    - Text tokens and counting words (bag of words)
    - Part-of-Speech tagging and counting tagged words
  - What you’ll learn:
    - Basic things you can do with Natural Language Processing
    - Starting thinking in a computational/ distance reading framework
    - Illustration: Can you identify a novel from only the most frequent nouns and verbs?
  - Corpus: Two mystery novels

Workshop Schedule

- Tuesday: Back to Basics – Working with Texts in Python
  - Morning: Python basics – lists, strings, and all the important things
  - Afternoon: The Pandas Dataframe
  - What you'll learn:
    - How to use python to do what you already do, but faster
    - Understand the Python version of Excel (called Pandas), and learn why it's 1000x better than Excel
    - Illustration: graphing the character space using Pandas
  - Corpus: Antigone

Workshop Schedule

- Wednesday: Document Term Matrix (DTM) and Word Scores
  - Morning: scikit-learn and word scores
  - What you'll learn:
    - What is a Document Term Matrix and why do we <3 it
    - How to identify important or interesting words, not just frequent words
    - Illustration: What words distinguish reviews from different genres
  - Corpus: Music Reviews
  - Afternoon: Dictionary Method
    - Counting groups of words to measure presence of themes
    - Corpus: Music Reviews

Workshop Schedule

- Thursday: Thematic Frequencies, or the Frequency of Themes
  - Morning: Text Classification
    - Classify text into different categories to measure presence of themes
    - Corpus: Literary texts
  - What you'll learn:
    - Two different methods to use computers to "code" or "categorize" text into pre-determined themes. Can it replace human coding?
  - Afternoon: Sandbox!
      - You do you

Workshop Schedule

- Friday: Computational Inductive Analysis
  - Morning:
    - Word Embedding
    - Unsupervised machine learning
    - Corpus: Literary texts
    - Wrap-Up
  - What you'll learn:
    - How to use computational methods to inductively identify themes in your text
    - A look back at how far you've come in a week
    - A look toward the future
  - Afternoon:
    - Lightning Talks (all workshops together)

Cheesy (but genuine) Thoughts

- You *can* learn to program!
  - Programming is a *creative* endeavor
  - There is no one right solution, no one way to code
  - Requires problems solving skills, artistic thinking
- You *will* get frustrated, you *will* hate your computer, and you *will* want to give up
  - Nothing will work the first time you try. Doesn't matter, try again
  - No matter what problem you have, 100 other people have had the same problem, 100 others have the answer (check StackOverflow, Google)
  - Look to each other (and StackOverflow) for help
- Once it works, it is *beautiful*

Cheesy (but genuine) Thoughts

- This Workshop only works if it is active, not passive
  - We know the scripts work on our computer. *Get them working on your computer*
  - Modify them, tie them up with a bow, and take them home with you
- This is a new and developing field, so now more than ever: **question everything and push boundaries**. You are the future of this field.

Our Goals

- Theoretical
  - General understanding of the past, present, future of text analysis
  - Overview of computational text-analysis, how it fits into traditional, or close reading
  - Intuition about programming/scripting and how computers read text
- Technical
  - Basic technical understanding of programming/scripting in Python
  - Deeper understanding of some key techniques
  - Knowledge of how to learn on your own
    - First reproduce, then modify
    - Use Stack Overflow
- Practical
  - How to translate these techniques to your own corpus/research
    - Go home with completed scripts you can modify/use in your own research
  - Ideas and a plan of action for how to advance your own research, contribute to this field