

# English 3844: Writing and Digital Media Guidebook

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# Chapter 1

## Introduction

Welcome to English 3844: Writing and Digital Media! In this class we write blogs, create podcasts and videos, and then curate all of this content on our own websites.

This booklet contains instructions and resources related to English 3844: Writing and Digital Media. Inside you'll find instructions on how to install and use Atom text editor, GitHub Desktop, and GitHub pages, as well as a few readings and a collection of audio and video development resources.

I'll add more and more content to this booklet as the semester progresses.



# Chapter 2

## Readings and resources

We won't have many readings this semester, but I have compiled a few excerpts from longer works below.

### 2.1 From “The Rhetorical Situation” by Lloyd Bitzer (1968)

*The study of rhetoric dates back thousands of years, predating even Socrates. Since then, countless scholars have tried to answer the question, “What makes discourse rhetorical?” Lloyd Bitzer offered one of the clearest answers to that question in 1968. Below is a collection of excerpts from his essay “The Rhetorical Situation”.*

#### Rhetoric alters reality

In order to clarify rhetoric-as-essentially-related-to-situation, we should acknowledge a viewpoint that is commonplace but fundamental: a work of rhetoric is pragmatic; it comes into existence for the sake of something beyond itself; it functions ultimately to produce action or change in the world; it performs some task. In short, rhetoric is a mode of altering reality, not by the direct application of energy to objects, but by the creation of discourse which changes reality through the mediation of thought and action. The rhetor alters reality by bringing into existence a discourse of such a character that the audience, in thought and action, is so engaged that it becomes mediator of change. In this sense rhetoric is always persuasive.

#### The rhetorical situation

Let us now amplify the nature of situation by providing a formal definition and examining constituents. Rhetorical situation may be defined as a complex of persons, events, objects, and relations presenting an actual or potential exigence which can be completely or partially removed if discourse, introduced into the situation, can so constrain human decision or action as to bring about the significant modification of the exigence. Prior to the creation and presentation of discourse, there are three constituents of any rhetorical situation: the first is the exigence; the second and third are elements of the complex, namely the audience to be constrained in decision and action, and the constraints which influence the rhetor and can be brought to bear upon the audience. Any exigence is an imperfection marked by urgency; it is a defect, an obstacle, something waiting to be done, a thing which is other than it should be.

#### Exigence

In any rhetorical situation there will be at least one controlling exigence which functions as the organizing principle: it specifies the audience to be addressed and the change to be effected. The exigence may or may not be perceived clearly by the rhetor or other persons in the situation; it may be strong or weak depending upon the clarity of their perception and the degree of their interest in it; it may be real or unreal depending on the facts of the case; it may be important or trivial; it may be such that discourse can completely remove it, or it may persist in spite of repeated modifications; it may be completely familiar - one of a type of exigences occurring frequently in our experience - or it may be totally new, unique. When it is perceived and when it is strong and important, then it constrains the thought and action of the perceiver who may respond rhetorically if he is in a position to do so.

### Audience

The second constituent is the audience. Since rhetorical discourse produces change by influencing the decision and action of persons who function as mediators of change, it follows that rhetoric always requires an audience - even in those cases when a person engages himself or ideal mind as audience. It is clear also that a rhetorical audience must be distinguished from a body of mere hearers or readers: properly speaking, a rhetorical audience consists only of those persons who are capable of being influenced by discourse and of being mediators of change.

### Constraints

Besides exigence and audience, every rhetorical situation contains a set of constraints made up of persons, events, objects, and relations which are parts of the situation because they have the power to constrain decision and action needed to modify the exigence. Standard sources of constraint include beliefs, attitudes, documents, facts, traditions, images, interests, motives and the like; and when the orator enters the situation, his discourse not only harnesses constraints given by situation but provides additional important constraints - for example his personal character, his logical proofs, and his style. There are two main classes of constraints: (1) those originated or managed by the rhetor and his method (Aristotle called these "artistic proofs"), and (2) those other constraints, in the situation, which may be operative (Aristotle's "inartistic proofs").

## 2.2 From “As We May Think” by Vannevar Bush (1945)

*Vannevar Bush played a key role in military research and development during WWII, including the development of the atomic bomb. He also kind of invented the concept of the hyperlink decades before personal computing and the web became realities. (He even predicted we would all walk around with our own personal cameras—not in our pockets, but on our heads!)*

*In the excerpt from “As We May Think” (1945) below, Bush outlines his vision for a personal computer containing vast amounts of information.*

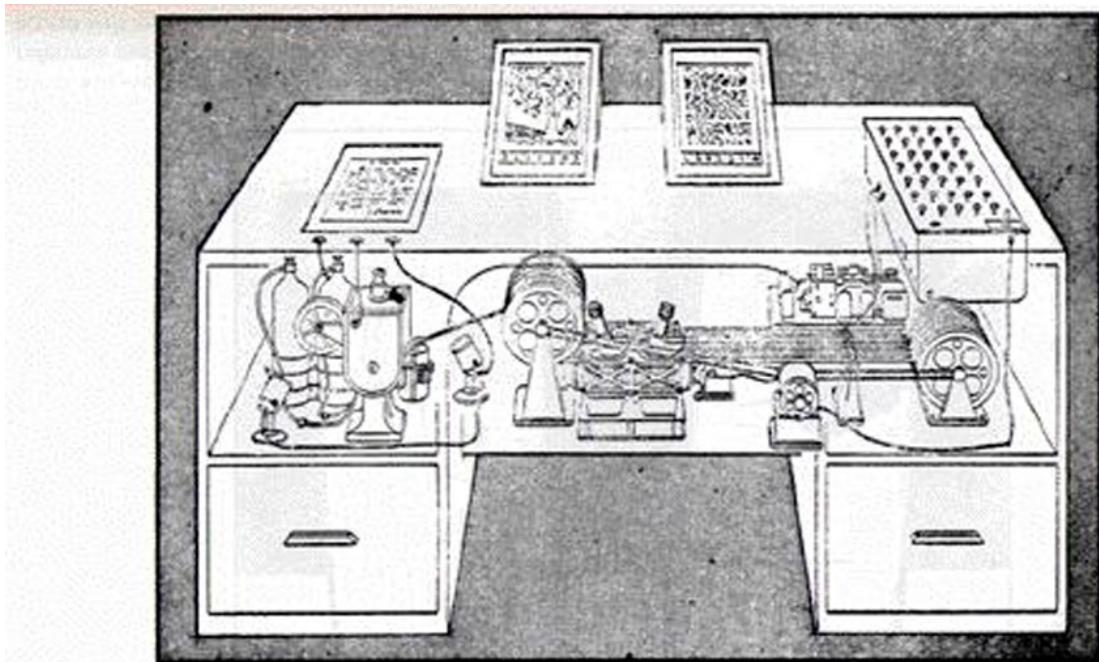
*Pay special attention to his thoughts on mental association and trails, as these concepts can teach us a ton about writing in and for digital media. Consider how you can use the ideas of the “associative web” and the link to help (a) tie your project together and (b) advocate for your group’s cause. How can you connect your blogs, podcasts, and videos together? How can you connect everything you make to the larger conversation about your topic?*

### The human mind and association

The real heart of the matter of selection, however, goes deeper than a lag in the adoption of mechanisms by libraries, or a lack of development of devices for their use. Our ineptitude in getting at the record is largely caused by the artificiality of systems of indexing. When data of any sort are placed in storage, they are filed alphabetically or numerically, and information is found (when it is) by tracing it down from subclass to subclass. It can be in only one place, unless duplicates are used; one has to have rules as to which path will locate it, and the rules are cumbersome. Having found one item, moreover, one has to emerge from the system and re-enter on a new path.

The human mind does not work that way. It operates by association. With one item in its grasp, it snaps instantly to the next that is suggested by the association of thoughts, in accordance with some intricate web of trails carried by the cells of the brain. It has other characteristics, of course; trails that are not frequently followed are prone to fade, items are not fully permanent, memory is transitory. Yet the speed of action, the intricacy of trails, the detail of mental pictures, is awe-inspiring beyond all else in nature.

Man cannot hope fully to duplicate this mental process artificially, but he certainly ought to be able to learn from it. In minor ways he may even improve, for his records have relative permanency. The first idea, however, to be drawn from the analogy concerns selection. Selection by association, rather than indexing, may yet be mechanized. One cannot hope thus to equal the speed and flexibility with which the mind follows an associative trail, but it should be possible to beat the mind decisively in regard to the permanence and clarity of the items resurrected from storage.



Memex in the form of a desk would instantly bring files and material on any subject to the operator's fingertips. Slanting translucent viewing screens magnify supermicrofilm filed by code numbers. At left is a mechanism which automatically photographs longhand notes, pictures and letters, then files them in the desk for future reference (LIFE 19(11), p. 123).

Figure 2.1: Memex machine

### The memex machine

Consider a future device for individual use, which is a sort of mechanized private file and library. It needs a name, and, to coin one at random, "memex" will do. A memex is a device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility. It is an enlarged intimate supplement to his memory.

It consists of a desk, and while it can presumably be operated from a distance, it is primarily the piece of furniture at which he works. On the top are slanting translucent screens, on which material can be projected for convenient reading. There is a keyboard, and sets of buttons and levers. Otherwise it looks like an ordinary desk.

In one end is the stored material. The matter of bulk is well taken care of by improved microfilm. Only a small part of the interior of the memex is devoted to storage, the rest to mechanism. Yet if the user inserted 5000 pages of material a day it would take him hundreds of years to fill the repository, so he can be profligate and enter material freely.

Most of the memex contents are purchased on microfilm ready for insertion. Books of all sorts, pictures, current periodicals, newspapers, are thus obtained and dropped into place. Business correspondence takes the same path. And there is provision for direct entry. On the top of the memex is a transparent platen. On this are placed longhand notes, photographs, memoranda, all sorts of things. When one is in place, the depression of a lever causes it to be photographed onto the next blank space in a section of the memex film, dry photography being employed.

There is, of course, provision for consultation of the record by the usual scheme of indexing. If the user wishes to consult a certain book, he taps its code on the keyboard, and the title page of the book promptly appears before him, projected onto one of his viewing positions.

Frequently-used codes are mnemonic, so that he seldom consults his code book; but when he does, a single

tap of a key projects it for his use. Moreover, he has supplemental levers. On deflecting one of these levers to the right he runs through the book before him, each page in turn being projected at a speed which just allows a recognizing glance at each. If he deflects it further to the right, he steps through the book 10 pages at a time; still further at 100 pages at a time. Deflection to the left gives him the same control backwards.

A special button transfers him immediately to the first page of the index. Any given book of his library can thus be called up and consulted with far greater facility than if it were taken from a shelf. As he has several projection positions, he can leave one item in position while he calls up another. He can add marginal notes and comments, taking advantage of one possible type of dry photography, and it could even be arranged so that he can do this by a stylus scheme, such as is now employed in the telautograph seen in railroad waiting rooms, just as though he had the physical page before him.

### **Associative indexing**

All this is conventional, except for the projection forward of present-day mechanisms and gadgetry. It affords an immediate step, however, to associative indexing, the basic idea of which is a provision whereby any item may be caused at will to select immediately and automatically another. This is the essential feature of the memex. The process of tying two items together is the important thing.

When the user is building a trail, he names it, inserts the name in his code book, and taps it out on his keyboard. Before him are the two items to be joined, projected onto adjacent viewing positions. At the bottom of each there are a number of blank code spaces, and a pointer is set to indicate one of these on each item. The user taps a single key, and the items are permanently joined. In each code space appears the code word. Out of view, but also in the code space, is inserted a set of dots for photocell viewing; and on each item these dots by their positions designate the index number of the other item.

Thereafter, at any time, when one of these items is in view, the other can be instantly recalled merely by tapping a button below the corresponding code space. Moreover, when numerous items have been thus joined together to form a trail, they can be reviewed in turn, rapidly or slowly, by deflecting a lever like that used for turning the pages of a book. It is exactly as though the physical items had been gathered together from widely separated sources and bound together to form a new book. It is more than this, for any item can be joined into numerous trails.

The owner of the memex, let us say, is interested in the origin and properties of the bow and arrow. Specifically he is studying why the short Turkish bow was apparently superior to the English long bow in the skirmishes of the Crusades. He has dozens of possibly pertinent books and articles in his memex. First he runs through an encyclopedia, finds an interesting but sketchy article, leaves it projected. Next, in a history, he finds another pertinent item, and ties the two together. Thus he goes, building a trail of many items. Occasionally he inserts a comment of his own, either linking it into the main trail or joining it by a side trail to a particular item. When it becomes evident that the elastic properties of available materials had a great deal to do with the bow, he branches off on a side trail which takes him through textbooks on elasticity and tables of physical constants. He inserts a page of longhand analysis of his own. Thus he builds a trail of his interest through the maze of materials available to him.

And his trails do not fade. Several years later, his talk with a friend turns to the queer ways in which a people resist innovations, even of vital interest. He has an example, in the fact that the outraged Europeans still failed to adopt the Turkish bow. In fact he has a trail on it. A touch brings up the code book. Tapping a few keys projects the head of the trail. A lever runs through it at will, stopping at interesting items, going off on side excursions. It is an interesting trail, pertinent to the discussion. So he sets a reproducer in action, photographs the whole trail out, and passes it to his friend for insertion in his own memex, there to be linked into the more general trail.

### **Wholly new forms**

Wholly new forms of encyclopedias will appear, ready made with a mesh of associative trails running through them, ready to be dropped into the memex and there amplified. The lawyer has at his touch the associated opinions and decisions of his whole experience, and of the experience of friends and authorities. The patent attorney has on call the millions of issued patents, with familiar trails to every point of his client's interest. The physician, puzzled by a patient's reactions, strikes the trail established in studying an earlier similar

case, and runs rapidly through analogous case histories, with side references to the classics for the pertinent anatomy and histology. The chemist, struggling with the synthesis of an organic compound, has all the chemical literature before him in his laboratory, with trails following the analogies of compounds, and side trails to their physical and chemical behavior.

## 2.3 How Google search works

*Vannevar Bush dreamed of a “mesh of associative trails” and of “associative indexing” that would help users navigate information structures. That mesh is now a web—the web. Sergey Brin and Larry Page indexed that web when they created Google. They weren’t the first to index the web, but they did conceive an algorithm that provided better results than any other search engine.*

*The video and reading below should help you understand why links are so crucial to any web content creator. The video comes from Google’s How Search Works page, while the reading comes from The Anatomy of a Large-Scale Hypertextual Web Search Engine, a paper Brin and Page wrote as Stanford graduate students.*

### How search works

Pay special attention to the importance of Google’s “PageRank” formula at about 1:30.

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**From “The Anatomy of a Large-Scale Hypertextual Web Search Engine” by Sergey Brin and Lawrence Page (1998)**

The Google search engine has two important features that help it produce high precision results. First, it makes use of the link structure of the Web to calculate a quality ranking for each web page. This ranking is called PageRank and is described in detail in [Page 98]. Second, Google utilizes link to improve search results.

### PageRank: Bringing Order to the Web

The citation (link) graph of the web is an important resource that has largely gone unused in existing web search engines. We have created maps containing as many as 518 million of these hyperlinks, a significant sample of the total. These maps allow rapid calculation of a web page’s “PageRank”, an objective measure of its citation importance that corresponds well with people’s subjective idea of importance. Because of this correspondence, PageRank is an excellent way to prioritize the results of web keyword searches. For most popular subjects, a simple text matching search that is restricted to web page titles performs admirably when PageRank prioritizes the results (demo available at [google.stanford.edu](http://google.stanford.edu)). For the type of full text searches in the main Google system, PageRank also helps a great deal.

### Description of PageRank Calculation

Academic citation literature has been applied to the web, largely by counting citations or backlinks to a given page. This gives some approximation of a page’s importance or quality. PageRank extends this idea by not counting links from all pages equally, and by normalizing by the number of links on a page. PageRank is defined as follows:

We assume page A has pages T1...Tn which point to it (i.e., are citations). The parameter d is a damping factor which can be set between 0 and 1. We usually set d to 0.85. There are more details about d in the next section. Also C(A) is defined as the number of links going out of page A. The PageRank of a page A is given as follows:

$$PR(A) = (1-d) + d (PR(T1)/C(T1) + \dots + PR(Tn)/C(Tn))$$

Note that the PageRanks form a probability distribution over web pages, so the sum of all web pages’ PageRanks will be one.

### Intuitive Justification

PageRank can be thought of as a model of user behavior. We assume there is a “random surfer” who is given a web page at random and keeps clicking on links, never hitting “back” but eventually gets bored and

starts on another random page. The probability that the random surfer visits a page is its PageRank. And, the  $d$  damping factor is the probability at each page the “random surfer” will get bored and request another random page. One important variation is to only add the damping factor  $d$  to a single page, or a group of pages. This allows for personalization and can make it nearly impossible to deliberately mislead the system in order to get a higher ranking. We have several other extensions to PageRank, again see [Page 98].

Another intuitive justification is that a page can have a high PageRank if there are many pages that point to it, or if there are some pages that point to it and have a high PageRank. Intuitively, pages that are well cited from many places around the web are worth looking at. Also, pages that have perhaps only one citation from something like the Yahoo! homepage are also generally worth looking at. If a page was not high quality, or was a broken link, it is quite likely that Yahoo’s homepage would not link to it. PageRank handles both these cases and everything in between by recursively propagating weights through the link structure of the web.

### Anchor Text

The text of links is treated in a special way in our search engine. Most search engines associate the text of a link with the page that the link is on. In addition, we associate it with the page the link points to. This has several advantages. First, anchors often provide more accurate descriptions of web pages than the pages themselves. Second, anchors may exist for documents which cannot be indexed by a text-based search engine, such as images, programs, and databases. This makes it possible to return web pages which have not actually been crawled. Note that pages that have not been crawled can cause problems, since they are never checked for validity before being returned to the user. In this case, the search engine can even return a page that never actually existed, but had hyperlinks pointing to it. However, it is possible to sort the results, so that this particular problem rarely happens.

This idea of propagating anchor text to the page it refers to was implemented in the World Wide Web Worm [McBryan 94] especially because it helps search non-text information, and expands the search coverage with fewer downloaded documents. We use anchor propagation mostly because anchor text can help provide better quality results. Using anchor text efficiently is technically difficult because of the large amounts of data which must be processed. In our current crawl of 24 million pages, we had over 259 million anchors which we indexed.

### Other Features

Aside from PageRank and the use of anchor text, Google has several other features. First, it has location information for all hits and so it makes extensive use of proximity in search. Second, Google keeps track of some visual presentation details such as font size of words. Words in a larger or bolder font are weighted higher than other words. Third, full raw HTML of pages is available in a repository.

## 2.4 Dark Patterns

*Dark patterns are design strategies used by content developers to trick you into taking some action you wouldn’t otherwise take. You have certainly encountered dark patterns before, but you (a) may not have recognized them as manipulative or (b) may not have realized that these patterns are indeed patterns—once you recognize them, you’ll see variations all over the web.*

*Check out the video below and then visit the Dark Patterns website.*

## 2.5 Buzzfeed’s formula

*This article is from 2014, which is in some respects a long time ago. But the core insights of Buzzfeed’s video formula, excerpted below, will still resonate with most anyone who has ever blown a couple hours taking Buzzfeed quizzes.*

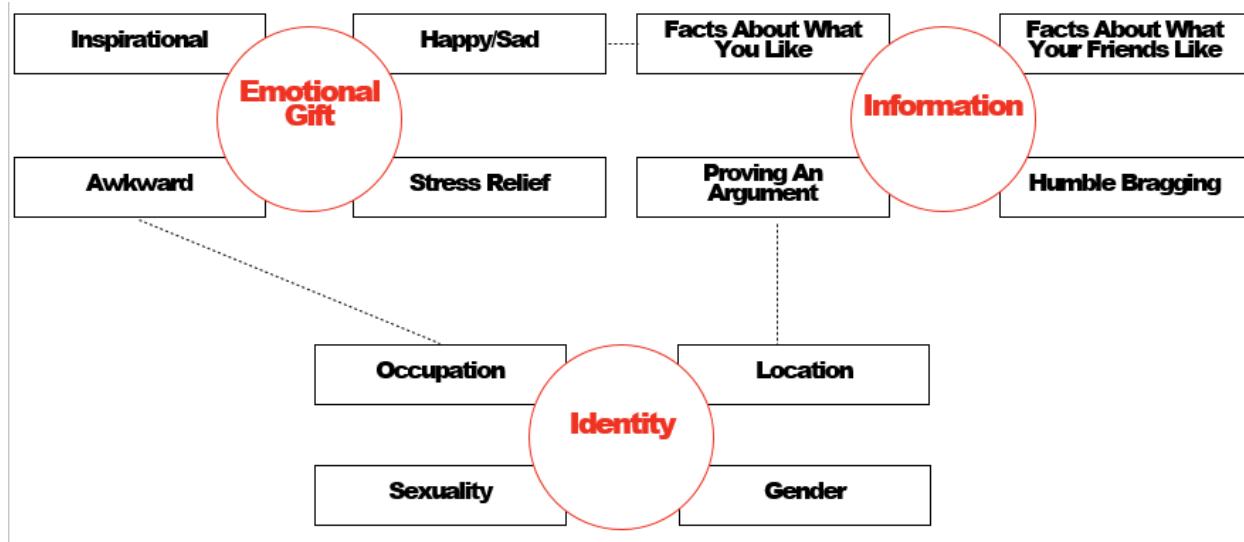


Figure 2.2: Buzzfeed content categories

Of particular note are Buzzfeed’s “pillars of content”: “emotional gift,” “information,” and “identity.” These pillars ensure that Buzzfeed creates not just consumable content, but sharable content.

**Emotional Gift:** This type of content taps into the vast range of human emotions. A BuzzFeed video should be able to change your mood from a sad to a happy one, it should be able to relieve stress, and give the viewer respite from upsetting personal, or even world events. The whole point of the video content is to make the viewer feel something – if they feel it, they will share it.

**Information:** Can you present information in a new, interesting way? Never underestimate the power of the humble brag – give the viewer the impression that they were aware of most of the facts, but were genuinely happy to learn a couple more. Also, great informational videos can help prove or disprove an argument, and that makes them fantastically shareable.

**Identity:** This is huge, and demonstrated by just how popular the BuzzFeed quizzes are. People want to be identified as something, to belong to a group, and taking the BuzzFeed quizzes is one way of confirming where they belong. Or not, in some cases. But it’s all good because it all leads to that content being shared.

## 2.6 From “The Medium Is the Message” By Marshall McLuhan (1964)

*The following excerpt represents the first couple pages of media scholar Marshall McLuhan’s landmark book Understanding Media. If you wish, you can also read a longer excerpt or check out a short video explanation narrated by Gillian Anderson, TV’s own Agent Scully.*

In a culture like ours, long accustomed to splitting and dividing all things as a means of control, it is sometimes a bit of a shock to be reminded that, in operational and practical fact, the medium is the message. This is merely to say that the personal and social consequences of any medium—that is, of any extension of ourselves—result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology. Thus, with automation, for example, the new patterns of human association tend to eliminate jobs it is true. That is the negative result. Positively, automation creates roles for people, which is to say depth of involvement in their work and human association that our preceding mechanical technology had destroyed. Many people would be disposed to say that it was not the machine, but what one did with the machine, that was its meaning or message. In terms of the ways in which the machine altered our relations

to one another and to ourselves, it mattered not in the least whether it turned out cornflakes or Cadillacs. The restructuring of human work and association was shaped by the technique of fragmentation that is the essence of machine technology. The essence of automation technology is the opposite. It is integral and decentralist in depth, just as the machine was fragmentary, centralist, and superficial in its patterning of human relationships.

The instance of the electric light may prove illuminating in this connection. The electric light is pure information. It is a medium without a message, as it were, unless it is used to spell out some verbal ad or name. This fact, characteristic of all media, means that the “content” of any medium is always another medium. The content of writing is speech, just as the written word is the content of print, and print is the content of the telegraph. If it is asked, “What is the content of speech?,” it is necessary to say, “It is an actual process of thought, which is in itself nonverbal.” An abstract painting represents direct manifestation of creative thought processes as they might appear in computer designs. What we are considering here, however, are the psychic and social consequences of the designs or patterns as they amplify or accelerate existing processes. For the “message” of any medium or technology is the change of scale or pace or pattern that it introduces into human affairs. The railway did not introduce movement or transportation or wheel or road into human society, but it accelerated and enlarged the scale of previous human functions, creating totally new kinds of cities and new kinds of work and leisure. This happened whether the railway functioned in a tropical or a northern environment, and is quite independent of the freight or content of the railway medium. The airplane, on the other hand, by accelerating the rate of transportation, tends to dissolve the railway form of city, politics, and association, quite independently of what the airplane is used for.

Let us return to the electric light. Whether the light is being used for brain surgery or night baseball is a matter of indifference. It could be argued that these activities are in some way the “content” of the electric light, since they could not exist without the electric light. This fact merely underlines the point that “the medium is the message” because it is the medium that shapes and controls the scale and form of human association and action. The content or uses of such media are as diverse as they are ineffectual in shaping the form of human association. Indeed, it is only too typical that the “content” of any medium blinds us to the character of the medium. It is only today that industries have become aware of the various kinds of business in which they are engaged. When IBM discovered that it was not in the business of making office equipment or business machines, but that it was in the business of processing information, then it began to navigate with clear vision. *The General Electric Company* makes a considerable portion of its profits from electric light bulbs and lighting systems. It has not yet discovered that, quite as much as A.T.&T., it is in the business of moving information.

The electric light escapes attention as a communication medium just because it has no “content.” And this makes it an invaluable instance of how people fail to study media at all.

For it is not till the electric light is used to spell out some brand name that it is noticed as a medium. Then it is not the light but the “content” (or what is really another medium) that is noticed. The message of the electric light is like the message of electric power in industry, totally radical, pervasive, and decentralized. For electric light and power are separate from their uses, yet they eliminate time and space factors in human association exactly as do radio, telegraph, telephone, and TV, creating involvement in depth.

A fairly complete handbook for studying the extensions of man could be made up from selections from Shakespeare. Some might quibble about whether or not he was referring to TV in these familiar lines from Romeo and Juliet:

But soft! what light through yonder window breaks?  
It speaks, and yet says nothing.

# Chapter 3

## Atom

### 3.1 Introducing Atom

**Atom** is a text editor. A text editor is a little bit like Microsoft Word, but for coding. With a little setup and practice, however, you may find yourself writing your English papers in Atom instead of Word. Atom is faster, simpler, prettier, and does most of what you need in terms of text production. At the very least, it's *much* better than Word for taking notes and writing things for the internet.

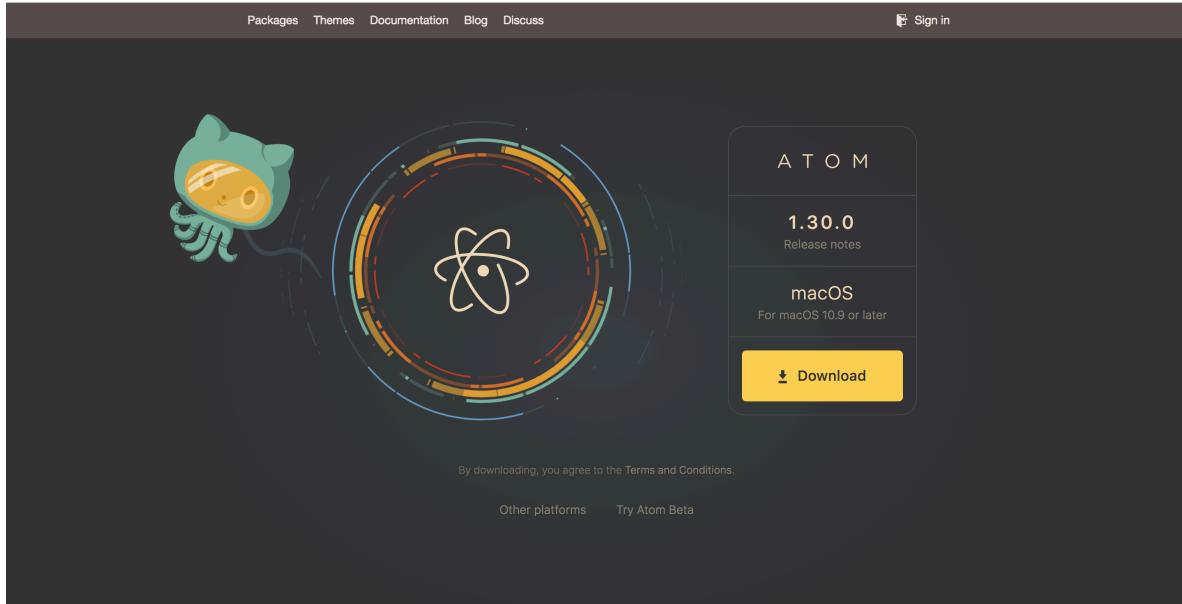
We'll eventually use it to code websites, but first we'll use it for writing blog posts. So let's install it and customize it for those tasks.

This process might be a little scary, but do the best you can. I'll include some links to help you if you get stuck.

### 3.2 Installing Atom

First, let's install the program and put it where it belongs on your computer.

1. If you don't have **Google Chrome** on your computer, download it. You don't *technically* need Chrome, but it's what we'll use to examine code later in the semester.
2. Open Chrome and go to atom.io. You should see a screen like the one below.



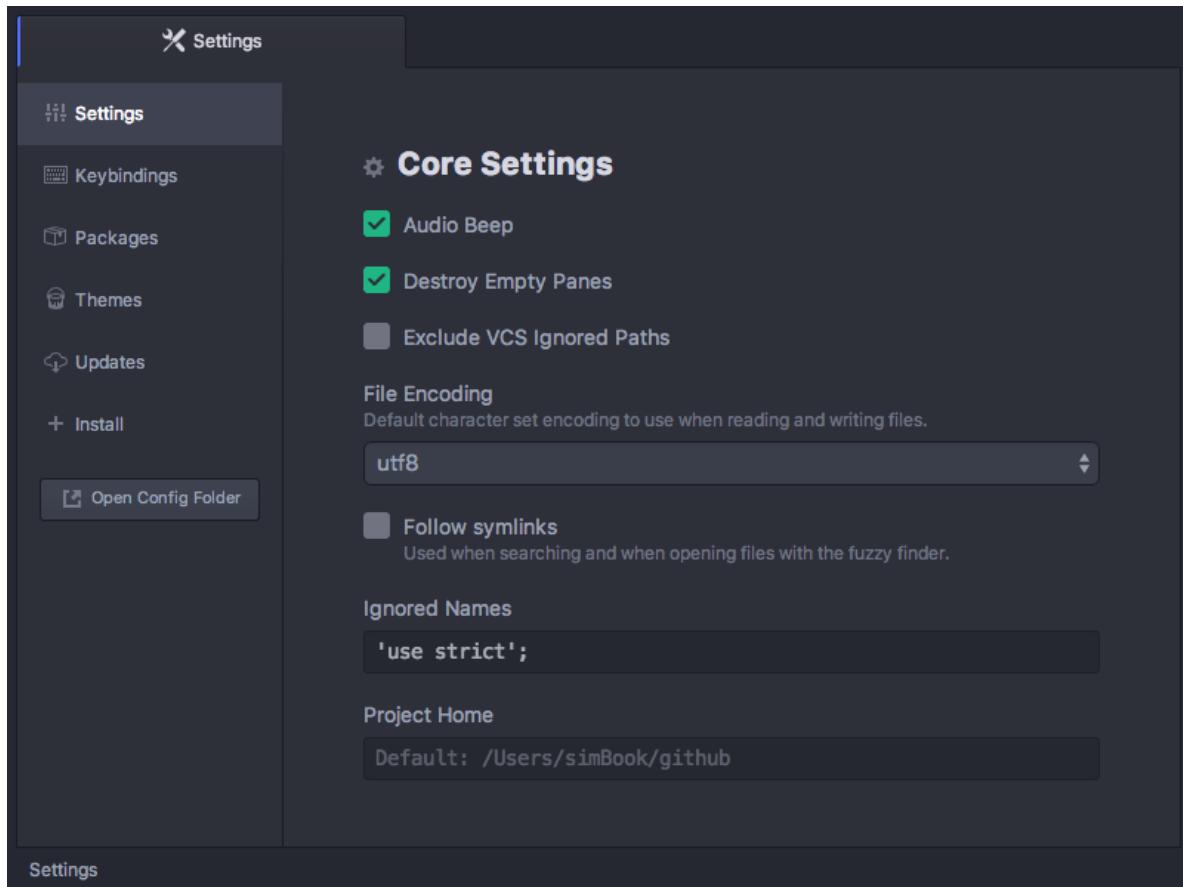
3. See the **Download** button? Click it. Your computer should then download a .zip (Mac) or .exe (Win) file. Some computers may automatically open and unpack the .zip file. If yours doesn't, then open the .zip file yourself. (If you don't know how to open .zip files on your computer, Google it.) Eventually, you should see the Atom icon.
4. If you're using a Mac, drag that icon to your **Applications** folder. If you're using Windows, Atom should automatically add an Atom shortcut to your **desktop** and your **Start menu**.
5. Click the Atom icon to launch Atom!

For more info/help, visit the Installing Atom section of the Atom documentation. Note that at the top of the page you can choose your operating system (Windows or Mac).

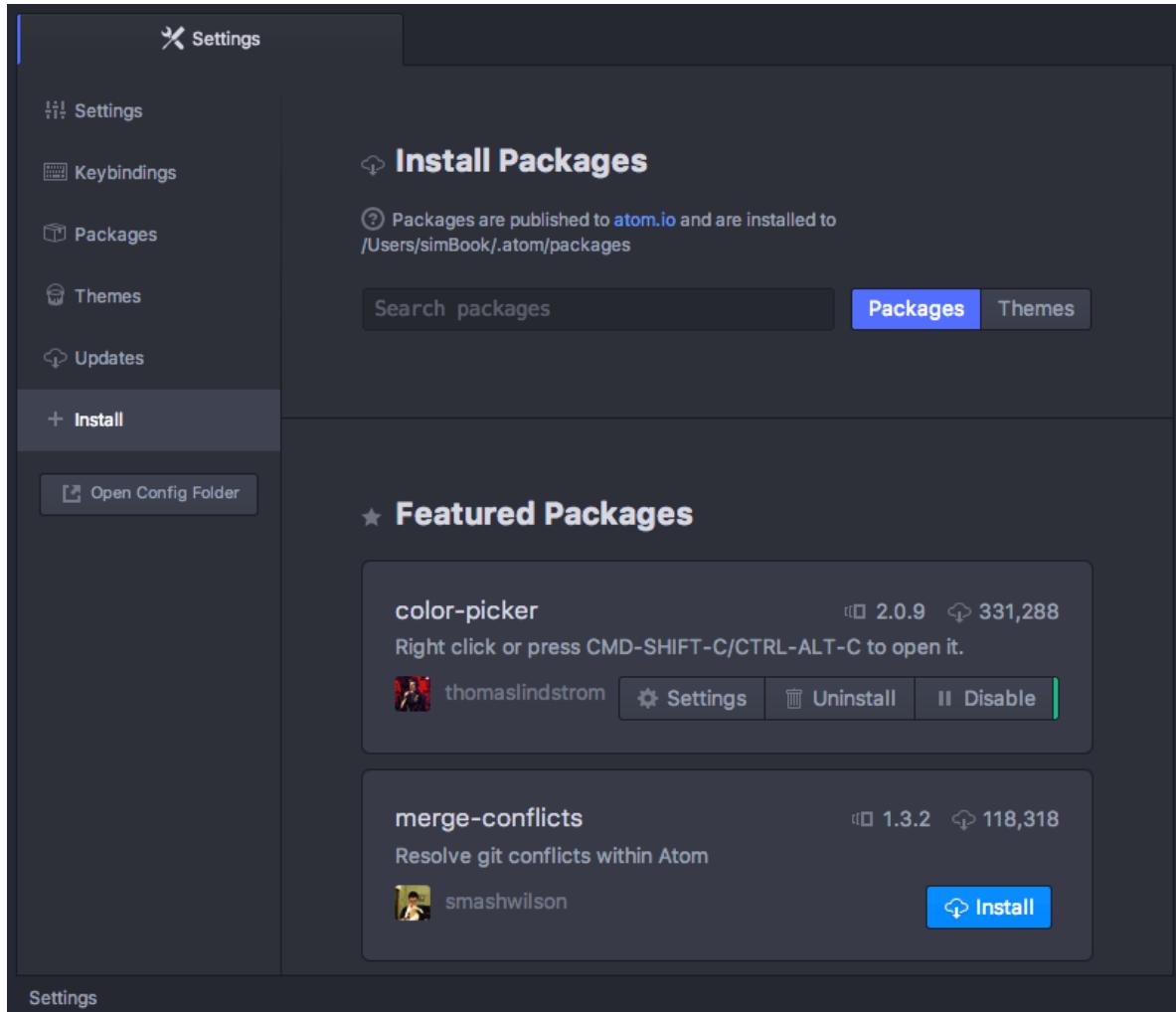
### 3.3 Setting up Atom and installing packages

Atom's a little different than Word. Word comes with a whole bunch of features, most of which you'll never use. Atom comes with a few features but allows you to quickly install many more. You install those features via the **package manager**. Let's install most of the packages we'll need this semester. While we're at it, we'll adjust some other settings to make Atom a more comfortable writing environment.

1. Once you've launched Atom, you should see a screen with a Welcome Guide and other information. At the top of the screen, you should see a menu bar like you do with other applications (File, Edit, View, etc.). Open the Settings view by choosing **File => Settings (Win)** or **Atom => Preferences (Mac)**. Alternatively, if you want to be a baller, just hit **ctrl+comma (Win)** or **cmd+comma (Mac)**. You should see a screen like the one below.



2. First, click the Editor tab, scroll down to **Soft Wrap**, and check the corresponding box.
3. Next, click the Themes tab. Here you can choose a dark background or a light background. If you prefer a dark background, do nothing. If you prefer a light background, choose One Light. Be sure to change both the UI Theme and the Syntax Theme.
4. Finally, click the Install tab. You should see a screen like the one below.



5. In the Install Packages search bar, search for **atom-beautify**. When the package appears, click the **Install** button and wait for the installation to complete. Congrats—you've just installed a package!
6. Repeat step 5 for each of the packages below. Once you've installed the packages, you can view some of them in the Packages menu (in the same menu bar as File, Edit, View, etc.).
  - **atom-html-preview** – allows you to view changes to your website from within Atom
  - **emmet** – allows you to write your code more quickly
  - **linter** – helps identify potential errors in your code. When you install this one, Atom may ask you to install “dependencies.” Allow each of these
  - **markdown-writer** – allows you to make pretty documents with no fuss (we’ll use this one right away!)
  - **tool-bar** – with the next package, adds a toolbar with buttons for italics, etc.
  - **tool-bar-markdown-writer** – see directly above
  - **pandoc-convert** – converts Markdown files (see below) to Word docs, PDFs, or other formats

## 3.4 Optional packages

If you wish, you may also download these packages:

- **wordcount** – adds a word count to the bottom of Atom’s interface
- **linter-write-good** – tries to identify common writing issues (e.g., passive voice). Can be helpful, but when in doubt use your own judgment.

## 3.5 Command Palette

You can do pretty much anything in Atom—open files, install packages, convert files from one type to another—via the Command Palette. To open the palette, type **cmd+shift+p** (Mac) or **ctrl+shift+p** (Win).

Now type whatever you want to do (e.g., open file, change theme, spell check) and select the option you want. At first you may struggle to figure out the right thing to type, but after some practice, using the Command Palette will be much faster than clicking through the various menus and submenus (though you can always do that, too!).



# Chapter 4

## Markdown

Markdown is a lightweight markup language, which basically means that it allows you to easily create italics, boldface, links, images, and bulleted/numbered lists. Markdown is faster than Word for most kinds of writing, but the best part is that a Markdown file can become a Word doc, a PDF, an HTML file, a slide show, an MLA document—whatever!

You can find a Markdown tutorial at [CommonMark](#).

### 4.1 Create a Markdown file

Make your first Markdown file in Atom by following the steps below.

1. In Atom, choose **File => New file**.
2. Save the file as a Markdown file by choosing **File => Save**. Name the file `markdown-test.md`. Be sure to use the `.md` suffix.
3. Paste the text below into the file, then save the file.

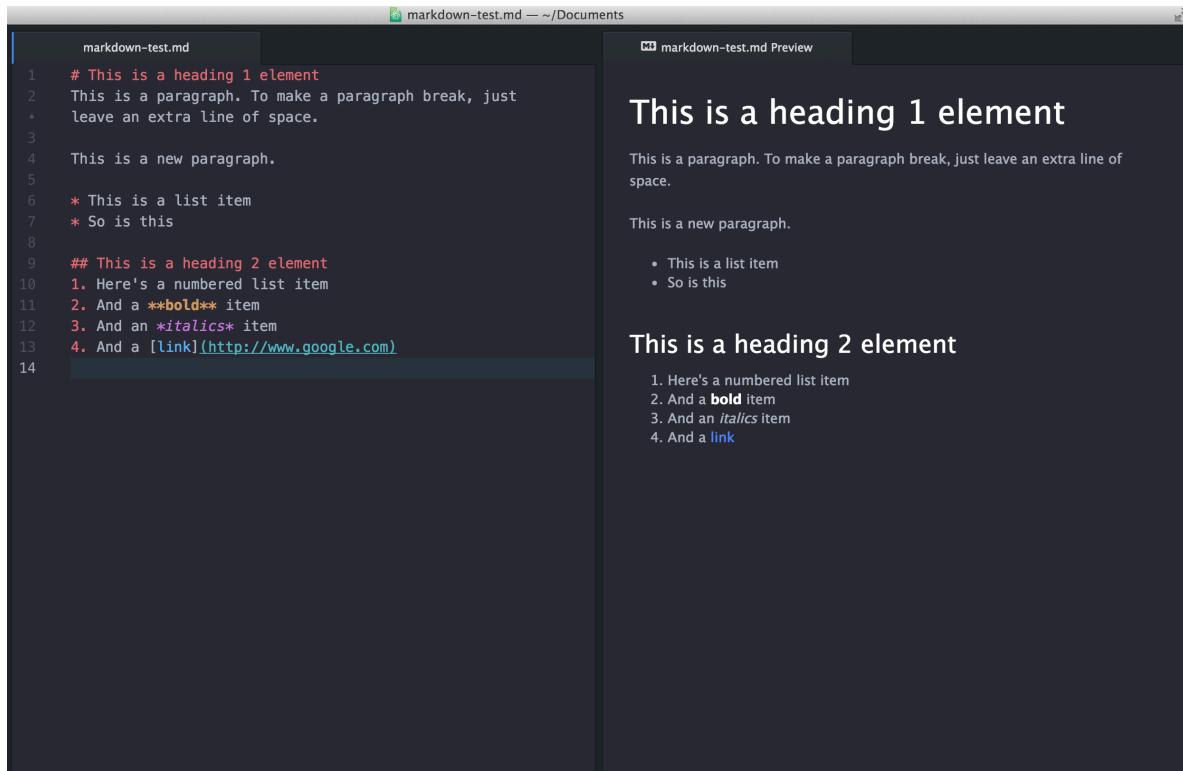
```
# This is a heading 1 element
This is a paragraph. To make a paragraph break, just leave an extra line of space.
```

```
This is a new paragraph.
```

```
* This is a list item
* So is this
```

```
## This is a heading 2 element
1. Here's a numbered list item
2. And a **bold** item
3. And an *italics* item
4. And a [link] (http://www.google.com)
```

4. Now, to see the output, look for the Packages menu in the menu bar (File, Edit, View, etc.) at the top of the screen. Click Packages, then choose Markdown Preview. You should see a preview window like the one below.



The screenshot shows the Atom code editor with a file named 'markdown-test.md' on the left and its preview on the right. The code in the file is:

```

1 # This is a heading 1 element
2 This is a paragraph. To make a paragraph break, just
3 leave an extra line of space.
4
5 This is a new paragraph.
6
7 * This is a list item
8 * So is this
9
10 ## This is a heading 2 element
11 1. Here's a numbered list item
12 2. And a bold item
13 3. And an italics item
14 4. And a [link](http://www.google.com)

```

The preview window shows the rendered content:

# This is a heading 1 element

This is a paragraph. To make a paragraph break, just leave an extra line of space.

This is a new paragraph.

- This is a list item
- So is this

## This is a heading 2 element

1. Here's a numbered list item
2. And a **bold** item
3. And an *italics* item
4. And a [link](http://www.google.com)

5. That's it! Markdown is that simple. If you want to learn more, use the Markdown cheat sheet. Soon, we'll learn how to convert Markdown to a nice pdf or html document—and how to paste perfectly formatted writing into emails, newsletters, Google or Word docs, and more.

## 4.2 Convert Markdown to HTML, Word, or PDF formats

Markdown's greatest feature is that Markdown content can become pretty much any other kind of content. Your Markdown can become a web page, a Word doc, a PDF, an MLA paper, an ebook (like this one!), a slideshow—whatever.

### HTML

HTML is the language of most web pages. Generally, each web page on a site consists of a single `.html` file. To convert your Markdown into HTML,

1. In Atom, make sure you're viewing your Markdown file. Open Markdown Preview by selecting **Packages => Markdown Preview => Toggle Preview**.
2. Right-click some blank space in the preview window and select **Save As HTML**. Atom will give you the options of renaming your file and selecting a save location. Be sure the filename ends in `.html` (if you see something like `filename.md.html`, you can delete the `.md` part). Save it to your documents folder (or wherever).
3. Find your new HTML file on your computer, and double-click it to open it in your web browser. If you want to view or edit the HTML file, simply open it in Atom!

### Pasting HTML into Medium

In most cases, you can paste your HTML into Medium with no errors. Simply open the HTML file in your browser (step 3 above), then copy the entire document to your clipboard. Paste the copied content into the Medium editor.

### Word or PDF

To convert your Markdown to Word or PDF format, you'll need Atom's **pandoc-convert** package. See

**Setting up Atom and installing packages.** To convert your Markdown,

1. In Atom, make sure you're viewing your Markdown file.
2. Press **cmd+shift+p** (Mac) or **ctrl+shift+p** (Win) to open the Command Palette.
3. In the Command Palette textbox, type **pandoc docx** (for Word) or **pandoc pdf** (for PDF). When you see the option you want, click the option or press return.
4. Atom will give you the options of renaming your file and selecting a save location. Be sure the filename ends in **.docx** or **.pdf** (if you see something like **filename.md.docx**, you can delete the **.md** part). Save it to your documents folder (or wherever).
5. Find the new Word or PDF doc on your computer and open it!

Some people have reported problems converting to PDF format. You may be able to fix this problem by downloading LaTeX, a document preparation system. If you don't anticipate using Markdown outside of this course, then you can skip this step and simply convert to Word format instead.

#### MLA

Want to achieve perfect MLA formatting every time? Try [markdowntomla.com](http://markdowntomla.com)!

You can also use Markdown to make slide decks *way* faster than you could with PowerPoint. Deckdown is a good place to start, but once we learn HTML and GitHub, we can add images, videos, etc.

## 4.3 Cheat sheet

This cheat sheet comes from Matt Cone at [markdowntoguide.org](http://markdowntoguide.org). You can also find a cheat sheet within Atom by clicking **Packages => Markdown Writer => Open Cheat Sheet**.

Element

Markdown Syntax

Atom Shortcut

Heading

**# H1 ## H2 ### H3**

Bold

**\*\*bold text\*\***

**b tab**

Italic

**\*italicized text\***

**i tab**

Blockquote

**> blockquote**

Ordered List

**1. First item 2. Second item 3. Third item**

Unordered List

**- First item - Second item - Third item**

Code

**`code`**

code tab

Horizontal Rule

---

Link

[anchor] (<https://www.example.com> "title")

1 tab

Image

! [alt text] ( "title")

img tab

# Chapter 5

## Medium

Medium is part blogging platform, part social network. Like most any other blogging platform, Medium allows you to post multimedia content. Unlike some other platforms, however, Medium also lets you follow other users, mention and link to other users (just like an @ on Twitter or tag on Facebook or Instagram). You can also follow particular topics (e.g., “Education,” “JavaScript”) and tag your own content with topics.

### 5.1 Medium help

Medium offers extensive user documentation. I’ve copied the links below from the Medium support page, where you can also find help on modifying your account settings, sharing on social media, and much more.

[Creating in Medium](#)

[Managing posts](#)

[Your drafts & posts](#)

[Your stats](#)

[Tags](#)

[Share draft](#)

[Unlisted publishing](#)

[Revision history](#)

[Content licenses](#)

[Writing & editing](#)

[Write post](#)

[Format text](#)

[Images](#)

[Embeds](#)

[Custom titles & subtitles](#)

[Partner Program](#)

[Join Partner Program](#)

[Write for members](#)

Your Partner Program dashboard

Friend Links

Calls to action

Responses & notes

Write response

Leave note

Migrations & integrations

Import post

Import archive

Wordpress plugin

Publishing API

Tips & more

Medium's Curation Guidelines

Update Facebook & Twitter cards

Keyboard shortcuts

## 5.2 Pasting Markdown-authored content into Medium

You can compose directly in Medium's editor, but in this class we compose in Markdown. We use Markdown because Markdown content can become so many other types of content. (See the Markdown chapter of this book.) Composing in Markdown also ensures that you always have a copy on your own computer. After all, you never know when you might lose your internet connection.

To cleanly paste your Markdown-authored content into Medium, you should first convert your content into an HTML file, then open that HTML file in your browser, copy the file's contents, then paste into Medium.

### Converting from Markdown to HTML

To convert your Markdown content to HTML, you can use two methods. If you have installed the pandoc package, you can convert to HTML the same way you would convert to Word or any other format:

1. In Atom, make sure your cursor is in your Markdown file.
2. Open the Command Palette by typing `cmd+shift+p` (Mac) or `ctrl+shift+p` (Win).
3. In the text entry field, type “pandoc html5” and press `return`.
4. Choose the name and path of your file. Make sure your filename ends in `.html` (e.g., `filename.html`, **NOT** simply `filename`). If the suggested filename contains the text `.md`, you may delete that text.
5. Press `return`. You should receive confirmation if the process succeeds.

If you don't have pandoc, you can follow the alternate instructions below.

1. In Atom, make sure you're viewing your Markdown file. Open Markdown Preview by selecting **Packages => Markdown Preview => Toggle Preview**.
2. Right-click some blank space in the preview window and select **Save As HTML**. Atom will give you the options of renaming your file and selecting a save location. Be sure the filename ends in `.html` (if you see something like `filename.md.html`, you can delete the `.md` part). Save it to your documents folder (or wherever).
3. Find your new HTML file on your computer, and double-click it to open it in your web browser. If you want to view or edit the HTML file, simply open it in Atom!

### Pasting HTML into Medium

This part is simpler. To paste your HTML into Medium, simply

1. Find the HTML file on your computer and open it in your web browser (Chrome recommended).
2. Copy the contents of the page to your clipboard.
3. Paste the contents of the page into Medium's editor.

In most cases, the content should paste perfectly. Sometimes, however, you may encounter problems such as

- **Images don't paste.** If you included an image in your Markdown file, it will only paste into Medium if the image was located on the web (e.g., on Google Images, NOT on your computer). To add an image that IS located on your computer, see the Medium Help Center.
- **Headings look different.** Medium offers two levels of headings, no more. If you try to include additional levels of headings, Medium will change your formatting. Use only two levels of headings.
- **Just straight-up didn't work.** You may have converted your file incorrectly, pasted incorrectly, or written invalid or too-complicated Markdown. See me for help.

## 5.3 Using images: resources and fair use guidelines

The internet unlocked access to more content than any of us could ever consume. Anyone with a fast enough connection can download software, videos, podcasts, blogs, and of course images.

While much of this content is freely available, U.S. intellectual property laws apply even to free content—including images. Contrary to popular belief, using someone else's image violates the law in most cases, even if you acknowledge the source.

The U.S. Copyright Office's fair use guidelines includes four criteria for judging fair use of intellectual property:

- **Purpose and character of the use, including whether the use is of a commercial nature or is for nonprofit educational purposes.** Nonprofit use is more likely to be considered fair, and so is transformative use (i.e., use that adds something new and doesn't substitute for the original use). However, nonprofit use is NOT necessarily fair use.
- **Nature of the copyrighted work.** Use of news or documentary content is more likely to be considered fair than use of "creative" content like novels or songs.
- **Amount and substantiality of the portion used in relation to the copyrighted work as a whole.** Use of small portions is more likely to be considered fair. However, despite what you may have heard, there is no "10% rule."
- **Effect of the use upon the potential market for or value of the copyrighted work.** The less impact the use has on the value of the copyrighted work, the more likely it is that the use will be considered fair.

Keep these myths in mind:

- You do NOT necessarily have the right to use someone else's images (or other content) just because you acknowledge the creator.
- You do NOT necessarily have the right to use up to 10% (or any other specific amount) of someone else's work.
- Educational use is NOT necessarily fair use.

### Free and legal image resources

Fortunately, you can find freely usable images if you know where to look. Google Images actually has a usage rights search filter, though the quality of the results can vary, as can the constraints on usage.

One way to determine which usage constraints apply is to use only Creative Commons-licensed images. Creative Commons licenses clearly define the terms of fair use for a given image (or other content type). You can read more about license types on Creative Commons's licenses page.



Figure 5.1: Photo by Dimitri de Vries on Unsplash

But if you want to be extra safe AND find reliably high-quality photos, the sites below exclusively offer Creative Commons Zero (CC0)-licensed photographs. A CC0 license entitles you to use licensed content freely and without attribution (though attribution is still good manners).

- **Unsplash.** Unsplash offers CC0 photos, but they do encourage you to provide attribution—and they make attribution easy. See an example above.
- **Pixabay.** Pixabay offers CC0 photos, illustrations, and video clips.



# Chapter 6

## Website creation and hosting

Now that you've learned HTML and CSS, it's time to start building your own website! First, you'll download a template of your own choosing. Once you have your website files, you'll host them on GitHub so that anyone with an internet connection can see your page.

### 6.1 Download a website template

1. Visit **HTM5up** and choose a template. I would recommend one of the following:
  - Story
  - Forty
  - Stellar
  - Hyperspace
  - Solid State
  - Strata
  - Read Only
  - Telephasic
2. Unzip the download package. You should see a folder. Put this folder wherever you wish, but don't forget where you put it.
3. Inside the folder you just downloaded, you should see subfolders called, e.g., "assets" and "images," as well as an index.html file. Open that index.html file in Atom.
4. Play around with the HTML! Add your name to the page, maybe a description of yourself and your project. As you save your changes, look for them using Preview HTML in Atom OR by opening the index.html file in Chrome. (If you open the file in Chrome, you'll need to refresh the Chrome tab whenever you save changes in Atom.)

### 6.2 Host your website using GitHub pages

Now that you have your website files, we'll add them on GitHub. At the end of this process, your website will officially be on the web.

Apologies in advance: This setup process is confusing. In fact, GitHub in general is confusing until you get used to it. Please read carefully and ask for help if you encounter problems.

### 6.2.1 What is GitHub?

**GitHub** is sort of like Google Drive, but for software development. Your projects will live on GitHub's servers (the "cloud") but also on your own computer. An application called **GitHub Desktop** will work as a sort of go-between, ensuring that the files on your computer remain synced with the files on GitHub.

Finally, a service called **GitHub Pages** will allow you to keep your website on GitHub's servers for the low, low price of free.

One really nice feature of GitHub is its version control, which means that if you really mess up your website, you can revert to an earlier version. GitHub automatically saves every single version that you commit. This feature is very useful, but it also explains why GitHub takes some getting used to. You have to follow a somewhat complicated process to push your changes to GitHub, but in return you get the security of knowing that every version of your project will be archived forever.

### 6.2.2 Create a GitHub account

1. Visit [github.com](https://github.com) and sign up for an account **using your vt.edu email**. Do **NOT** use a non-vt email. Choose a username that's close enough to your real name to be recognizable to me.

### 6.2.3 Download and set up GitHub Desktop

Note that GitHub recently released a new version of this software, so I haven't tested these instructions except on my own machine.

1. Visit [desktop.github.com](https://desktop.github.com) and download the appropriate version (Mac/Win) for your machine. Be sure to put the application wherever you keep the other applications on your computer.
2. Open GitHub Desktop and enter your GitHub username and password.

### 6.2.4 Create a repository for your website and add your website files

This is the confusing part, so read carefully.

1. In GitHub Desktop, Choose File > New Repository
2. Name your repository **yourgithubusername.github.io** (e.g., `andylaut.github.io`)

It's **VERY** important to use the `yourgithubusername.github.io` format. If you don't, subsequent steps may not work.

3. If the previous step worked, then GitHub will create a folder called `yourgithubusername.github.io` somewhere on your computer (on my Mac, it was in the Documents folder). Locate that folder. You can always find your folder via GitHub Desktop by selecting **Repository => Show in Finder/Explorer**. You can also open files in Atom by selecting **Repository => Open in Atom**.
4. Now—and pay careful attention here—move your website files but **NOT** the containing folder into the `yourgithubusername.github.io` folder. The folder structure should look like this:

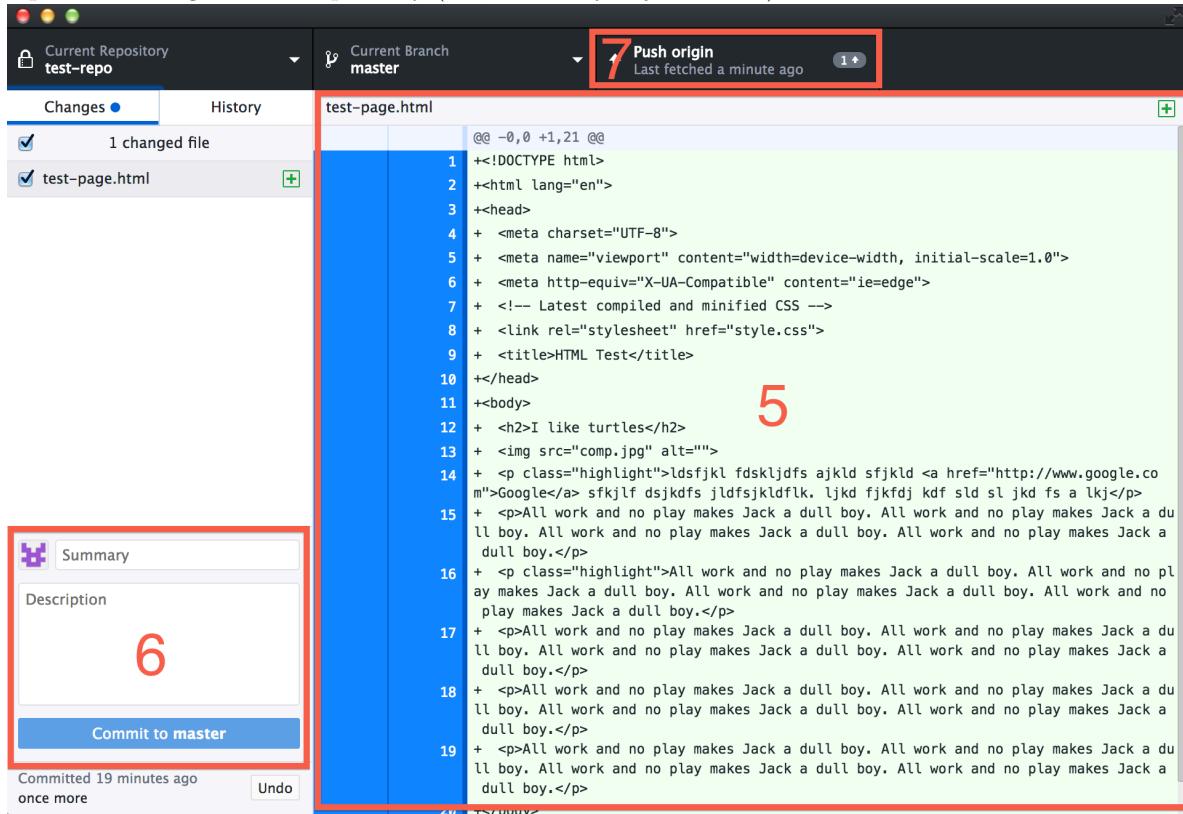
```
yourgithubusername.github.io
  assets
  images
  index.html
```

NOT

```
yourgithubusername.github.io
```

```
container folder
assets
images
index.html
```

5. Now return to GitHub Desktop. Verify that the Current Repository is set to yourgithubusername.github.io. You should see a bunch of text in the main window of the interface. This text represents changes to the repository (i.e., the files you just added). See the box labeled 5 below.



6. Commit the changes by typing a **summary** and **description** of the changes (description is optional but recommended) near the bottom of the interface, then clicking the **Commit to master** button (box 6 above). *Commit to master* means that you want to make these changes to the main version of your project on GitHub.
7. After you commit, look near the top of the interface for a tab that says either **Publish** or **Push origin** (box 7 above). Click that tab. Once the changes are done syncing (may take a minute or so), visit yourgithubusername.github.io to see your site on the honest-to-goodness internet. You now have a real website!

Now, whenever you make changes to your project in Atom (adding images, modifying HTML or CSS), the changes will appear in GitHub Desktop. Green highlighting represents added material; red highlighting represents deleted material. Whenever you want to push the changes to GitHub, follow steps 6 and 7 above.

### 6.2.5 Finding and modifying your files

So you now have

- Your website files on your computer
- Your website files on github.com
- GitHub desktop in between

It's a lot to keep up with! However, one advantage of using Atom is that it's built by GitHub, so Atom and GitHub tend to interface well. Here's how you can access everything you need from GitHub Desktop:

In the GitHub Destop menu bar, select **Repository**. You can now access your files on [github.com](https://github.com), in Atom, or in your system's file browser (Finder for Mac, Explorer (I think???) for Windows).

I had to restart my Mac before Open in Atom would work, so try that if you have trouble.

Once you've set up your repository in GitHub Desktop, I would advise against moving your website files to another location on your computer. Just leave them where they are and use GitHub Desktop to find them.

### 6.3 Emmet HTML shortcuts

HTML is the language of the web. In many ways, HTML is a blessing: It allows creators across the world to make consistent, clear, usable content. Nevertheless, writing in HTML can feel like a chore. (How many times do I have to type `<p></p>`?) **Emmet** makes HTML easy—easier, in fact, than writing similar documents in Word—assuming those documents contain headings, links, images, lists, etc.

Emmet provides an extensive list of shortcuts for HTML, CSS, and more. You can find the full list via the Emmet cheatsheet, but here's a table of some of the handiest Emmet shortcuts. (Press `tab` after entering each shortcut to execute.)

Content

Shortcut

Result

HTML doc

!

```
<!DOCTYPE html> (document skeleton)
```

Link

a

```
<a href=""></a>
```

Image

img

```
<img src="" alt="" />
```

Bold

str

```
<strong></strong>
```

Italics

em

```
<em></em>
```

Ordered (numbered) list

ol+

```
<ol>           <li></li>           </ol>
```

Unordered (bulleted) list

ul+

```
<ul>           <li></li>           </ul>
```

You can always add HTML content by converting Markdown to HTML. Create your HTML file and then follow the steps below.

Open your Markdown file in Atom.

Open the Markdown Preview window and right-click.

Select Copy as HTML.

Paste your HTML into the appropriate place (probably somewhere in the body section) in your HTML document.



# Chapter 7

## Audacity

This chapter will introduce you to editing audio in Audacity. Audacity is a free, open-source application. While it's extremely powerful given its \$0 price point, Audacity is not particularly user-friendly. Audacity's manual is linked above. This chapter condenses that manual down to the bare essentials and highlights some information that Audacity's manual buries. For instance, the note below is **EXTREMELY IMPORTANT**:

Once you've created an Audacity project, **NEVER** move the project or any of its files to a new folder. Instead, export the project as a WAV or MP3 file and move that file instead. If you move any project files, you will probably corrupt the entire project and have to start over.

### 7.1 Before beginning

Before completing the task below, download Audacity and LAME (if you haven't already).

### 7.2 Troubleshooting

If this task is difficult for you, watch the first three videos in the Using Audacity Youtube playlist at home, then try again.

### 7.3 Getting started

First, we'll learn how to copy, paste, and arrange audio.

1. Download the "5 Things to Know" podcast.
2. Open the mp3 file in Audacity and **also** open a new, blank project. You can do both from Audacity's File menu.  
If you can't open the mp3 file, you probably haven't installed the LAME encoder. (Confusing, I know.) See the Get started with audio assignment.
3. In the Audacity interface, select about 10 seconds of audio. Split that selection from the rest of the track (**ctrl/cmd+i** or **Edit => Clip Boundaries => Split**).
4. Copy that chunk of audio to your clipboard (**ctrl/cmd+c**).
5. Switch to your blank file. Create a new track (**Tracks => Add New => Stereo Track**). Paste your chunk of audio into this track (**ctrl/cmd+v**).
6. Select another chunk of the podcast track, split it, copy it, and paste it into another new track in your second project.

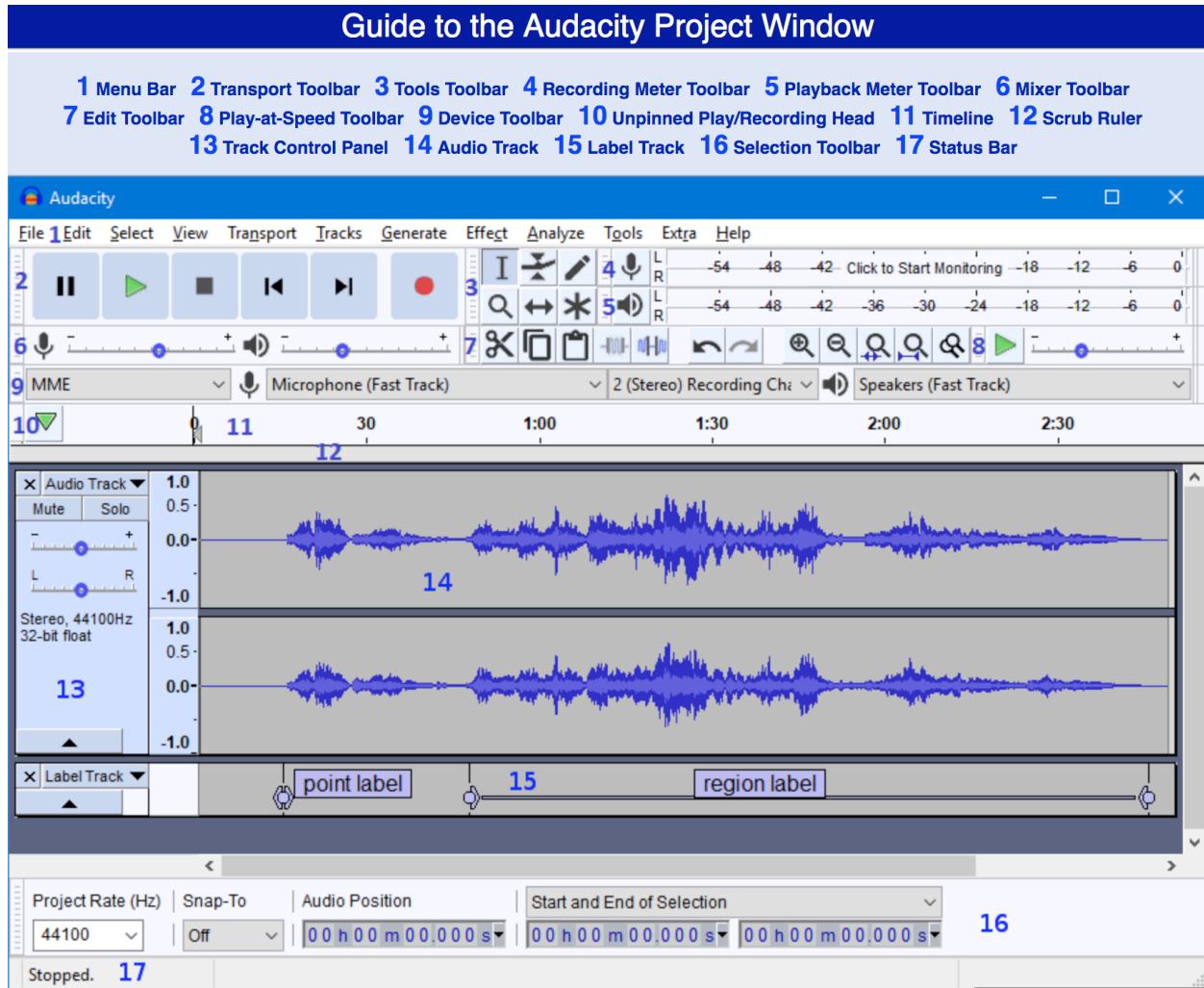


Figure 7.1: Audacity interface

7. Arrange these two tracks so that the second clip begins just as the first ends.

You now know how to perform basic audio editing in Audacity!

## 7.4 Adding effects and labels

Once you feel comfortable arranging audio clips, add some effects to your audio.

1. Repeat steps 6-7 above, adding a third clip after the first two. This time, however, try adding a fade out. Align the third chunk of audio a little under the second, so that the clips overlap. Then highlight the overlapping portion of the second track and choose **Effect => Fade Out**.
2. Add a fourth clip under the third, but try adding a crossfade instead of a fade out. Overlap the third and fourth chunks of audio, select the overlapping portion of **both** the third and fourth tracks, and choose **Effect => Crossfade Tracks**.
3. Try autoducking. Autoducking can automatically adjust background sound whenever foreground sound appears. This time, try using the Audacity user documentation. (You'll probably need it later!)
4. Add labels to quickly jump to each break. Place the cursor where you want to add a label and select **Tracks => Add Label at Selection** (or type **ctrl/cmd+b**). Type a description for the label. Adding labels will save you from having to search for important points in your project.
5. Name each track. To the left of each track, look for the down arrow next to the phrase "Audio Track." Click that down arrow and select "Name." Change the name to whatever you want.
6. OPTIONAL: Keep experimenting until you feel comfortable manipulating tracks in Audacity. Maybe try adding some audio from YouTube Creator Studio.
7. Save the project and export it as an mp3 (**File => Export Audio**). Be sure to add metadata like track name, artist name, etc.

## 7.5 Free music and sound effects

We've discussed fair use and images. The same fair use guidelines apply to music. Thus, when possible, you should compose your own music or use Creative Commons-licensed audio. I've included some freely available audio below. In most cases, you should acknowledge the creator when possible.

### 7.5.1 Music

SoundCloud users have created hours of Creative Commons-licensed music to edit and use in your own work. Much of this music could be described as "amateur EDM," but with a little digging you can find some great stuff. For example, check out this mix by Dublab, a non-profit radio network in Los Angeles. The mix features acclaimed artists like Julia Holter and James Pants.

As a music snob, I'd say SoundCloud has the best selection of *good* Creative Commons-licensed music, but the good stuff can be difficult to find. CCMixter, on the other hand, has compiled a playlist specifically for podcast creators.

### 7.5.2 Sound effects

A few well-placed sound effects can enrich the listening experience. The sound of rain, for instance, or of gravel crunching under footsteps, can immerse listeners in a story.

You can record your own sound, of course, but the YouTube Creator Studio offers plenty of high-quality sound effects (and music).



# Chapter 8

## Video

You've probably heard of iMovie (Mac) and Windows Movie Maker or Microsoft Photos (Windows). These applications are more than sufficient for many purposes. You may already have one of them on your computer, and if not, Movie Maker/Microsoft Photos are free to download. (iMovie is affordable, too.)

But I want to focus on some resources that maybe you haven't heard of. In some cases, I'll also include links to tutorials.

### 8.1 YouTube Creator's Studio

The YouTube Creator's Studio doesn't offer a ton of functionality, but you can trim and combine multiple videos, add transitions, and more. Best of all, you can easily incorporate clips from a large (I would assume the largest of its kind) selection of free, Creative Commons-licensed music and videos. For many projects, that's all you need. And the process is shockingly easy.

### 8.2 YouTube Recommended Upload Encoding Settings

No matter how you produce your video, if you want to post it to YouTube, try to follow YouTube's recommended upload encoding specifications for best results. Your video will upload faster and look better.

### 8.3 iMovie

If you have a Mac, you may already have iMovie. This application will best suit beginners. You can find tutorials via [lynda.vt.edu](https://www.lynda.com).

### 8.4 Movie Maker or Microsoft Photos

If you have an older version of Windows, you may have Movie Maker. Windows 10 users likely have Microsoft Photos. Either application offers beginner-level video editing. You can find tutorials via [lynda.vt.edu](https://www.lynda.com).

## 8.5 OpenShot Video Editor

If you don't already have iMovie and don't want to pay for it, OpenShot may be a good alternative. I've had some problems with crashing, but if you save often, you can still produce a simple video without Blender's learning curve. The basic interface is similar to iMovie's or Movie Maker's, but you may run into trouble with plugins and other scary computer issues. Google if you need help! In the meantime, here's a good introduction.

## 8.6 DaVinci Resolve

If you've already used iMovie or Movie Maker/Microsoft Photos, try DaVinci Resolve for a more advanced option. Best of all, you can download Resolve for free (scroll to the bottom of the page for download link). You can find tutorials via [lynda.vt.edu](http://lynda.vt.edu).

## 8.7 Blender

This program is for power users. If you've already tried iMovie or Movie Maker and need something more powerful—well, you could shell out hundreds of dollars for Final Cut Pro or Adobe Premiere, or you could use Blender for free.

Blender is primarily for 3D modeling, but its video sequencer offers more power and control than any reasonable person should expect to get for free. You can fine-tune your zooms, pans, crossfades—pretty much anything you'd want to do. The downside: It is *hard* to learn. Luckily, you can find good tutorials online. Oliver Villar offers a crash course in Blender basics, while YouTube user Mikeycal Meyers offers hours of instruction. Both options are good, but I'd recommend the latter.

Expect a steep learning curve, but also great results.

## 8.8 Clip Converter

Clip Converter allows you to download videos from YouTube, Vimeo, and more. All you need is the target video's URL. *Extremely* useful if you need to insert a small clip of another video into your own. Just be sure to follow fair use guidelines or rely on Creative Commons-licensed videos.