In this section we look at information formats and discuss some of the main formats you’re likely to use in College courses.

Once you're familiar with the types and formats of information available to you, you can make critical decisions about which sources to use for any given project.

**Print vs. Digital**

Digital information has become widely available through the Internet and other technologies.

In the early days of digital information, scholars tended to distinguish the value of *print*, which indicated an editing process and some kind of intellectual and financial threshold for publication, and *digital*, which could be produced by just about anyone with unknown credentials and indeterminate value.

Now the line between print and digital has largely disappeared. In the William & Mary campus libraries you'll find vast amounts of both print and digital information, with much more available electronically through the library's catalog and databases.

Does it matter if you consult a scholarly journal in print or in digital form? The information is the same, although you'll cite the source a little differently.

Digital formats can give you access to information that wouldn't be possible otherwise. You can hear an orchestra perform without going to the concert. Or view artifacts or documents without traveling to their physical location. Keep in mind that with some kinds of information there's still a difference between seeing or hearing and actually being there. Part of being information literate is making your own judgment about how the format affects the value of the information.

**Books and Periodicals**

When we think of books and periodicals, whether in print or digital, we’re usually referring to items of text.

Books about a single, focused topic are called *monographs*. With a monograph, the entire work might be relevant to a topic you’re researching.
Another kind of book, an edited volume, will contain chapters by different authors that have been edited, arranged, and compiled for some kind of overarching purpose. The entire edited volume might be relevant for your project. But it’s also possible that only a chapter or two will be relevant.

*Periodicals* are items that are published at regular intervals, such as daily, weekly, monthly, quarterly, or annually.

Some periodicals are considered *popular*, meaning that they're written for a broad audience at a widely accessible reading level. This material typically doesn't feature technical details or expert terminology. The author might have deep knowledge of the subject, or might just be good at skimming over the hard stuff and writing an interesting story for a general audience. Examples of popular periodicals include *Newsweek*, *Sports Illustrated*, *Cosmopolitan*, and *Entertainment Weekly*.

Another type of periodical is the *scholarly journal*. If you’re studying a particular field and you want to know about the research being done in that field, scholarly journals are the place to look. The contents may seem dense and impenetrable, especially if you're new to the field. But scholarly journals are where you can learn about detailed current research findings and the methodologies used. And, importantly, articles in scholarly journals have usually gone through *peer review*.

*Peer review* is a process where an author's draft article is reviewed by peer experts in the field. These colleagues evaluate the draft and judge whether it is of high enough quality to be published in that journal. To eliminate bias, this process is often *double blind*, meaning that the author doesn’t know who's reviewing the draft, and the reviewers don’t know who submitted the draft.

In most cases, the reviewers will return the draft to the original author or authors with suggested changes and improvements. This back-and-forth process can happen more than once and can last for several months or even years. Once completed, the article is published in the scholarly journal.

As you can tell, the bar is much higher for being published in a scholarly journal than for a popular magazine or newspaper. The William & Mary campus library collections contain all kinds of books and periodicals. Which type and format of information is best to use will depend on the nature of your project.
Databases

In the world of information tools, databases occupy a very large space. Databases meet a great many information needs. And there are many, many databases.

The term database encompasses quite a variety of resources. For our purposes here, you should know that all databases share these characteristics:

They are available **online**

**They are collections** of information

Their content is **indexed**

And their content is **searchable**

Databases live in the private sector, with companies assembling materials and designing some kind of user interface to access the material. A database might be populated with articles and journals (or books, or images, or sounds, or potentially any type of information), and these items might number in the thousands or even millions. The database publisher then charges a fee for access to the materials in its database.

Swem Library subscribes to more 300 databases. As a William and Mary student, you have full access to all of these.

3.1 Primary, Secondary, Tertiary Sources

Another way to think about information is whether the source is considered primary, secondary, or tertiary. You might have heard these terms before. Basically, what kind of source you're dealing with will determine how you think critically about its value and its best use for the project you're working on. The distinctions between primary, secondary, and tertiary sources will definitely come into play as you complete projects for your College courses.

**Primary Sources**

Primary sources are those that get us closest to an event, time, place, or experience. Commonly recognized primary sources are items like personal letters, photographs, and diaries. Other forms of primary sources include government and church records, interviews, speeches, and original works of art, literature, film, and music. In the sciences, primary sources can take the form of original research published in journals, conference proceedings, lab notes, and technical reports.
Many of us routinely create primary sources, although we might not think about it in this way. Every time we post an original thought as a Facebook status or a tweet, or when we post original thoughts and content to our blogs, we are creating primary sources. Someday, a researcher could be poring over your Facebook account as a primary source to try to learn something about twenty-first-century life!

In the past, primary sources were often difficult to obtain. A particular letter or diary, for example, might exist in only one location. To examine that item, a researcher would have to travel to that location or, possibly, rely on the kindness of a librarian or archivist to send a photocopy, if possible. Today, more and more primary sources are available through digitization. Digitization, though, is a slow and labor-intensive process, and the amount of material that has been digitized and shared online is a small fraction of what actually resides in libraries, archives, and personal collections throughout the world.

The William and Mary libraries give you access to a wealth of primary sources. Examples include the Special Collections Research Center, where the College’s archives are housed, and the rare books and manuscripts collections. The library also subscribes to databases of primary sources, and you can access free sites like the American Memory Project and the LIFE online photo archive hosted by Google.

**Secondary Sources**

Secondary sources are those that summarize, analyze, and comment on primary sources or other secondary sources. In a secondary source, the author or creator was not directly involved in an event or experience and did not observe it first-hand.

If you were to read a novel and write a critical essay about it, you would be creating a secondary source with your essay. If, in support of your essay, you consult other scholars’ works of literary criticism about that novel, you would also be using secondary sources.

**Tertiary Sources**

A tertiary source brings together information from primary and secondary sources to provide an overview of a topic and a synthesis of different views on the topic. Encyclopedias are a type of tertiary source.

Here’s an example showing all three types of sources:

You’re looking for information about Napoleon Bonaparte’s military and political leadership. For primary sources, you might consult Napoleon’s own words and works, along with military correspondence and government records from the time period. For secondary sources, you might consult twentieth-century
scholars’ books and articles that analyze or critique Napoleon’s leadership. An encyclopedia of French history is a tertiary source that you might consult.

3.2 The Information Cycle

We’ve talked about how when enough people believe information has value, it tends to be collected, organized in some way, and made available to other people, who can then build on that information and add to the creation of knowledge.

There’s another variable that plays a role: Time. The way in which popular interest and media coverage of an event or a topic change over time is known as that event’s or that topic’s information cycle.

When a topic involves many people and takes place over a long period of time, it tends to generate a wide and deep pool of information. The Roman Empire is a good example. Many people in many parts of the Western world were profoundly affected by the Roman Empire, and it persisted long enough to generate a significant number of primary sources. Secondary and tertiary sources are still mining that pool of information. You could say that the Roman Empire has a very long information cycle.

Other topics involve a lot of people but have a very short information cycle. This is especially true on social media, where a tweet or entertaining video can go viral and be seen by millions of people. But if people don’t find the topic interesting enough or significant enough to research it, it’s likely not to accumulate additional information and will disappear almost entirely in a short amount of time.

Let’s take a look at an example information cycle. Something happens, and almost right away people are tweeting or posting to other forms of social media. Very soon after, those posts begin to be shared and voted on. There are online discussions about the event. Bloggers might write about it in their blogs. The types of content posted in online forums and blogs will likely be a mix of reporting the basic facts of the event, commentary about how one feels about the event, and analysis about the significance of the event. People joining in could include experts on the event, along with people who have no idea what they’re talking about. There might be a lot of bias and personal feelings added to the mix.

That might be as far as the story goes. But if the event has a broad appeal or is significant enough to be newsworthy, then the information cycle continues. News and current events websites might pick up and share the story. Their print counterparts might do the same within a day or two. With these types of sources, you can expect reporting of facts along with commentary and analysis, and there will probably be less evidence of bias and personal opinion.
The story might fizzle out there – or maybe not. Depending on the scale or importance of the event, weekly or monthly magazines might keep the story alive. And, of course, online forums, blogs, and websites can continue the conversation.

Books and scholarly articles, if they deal with the event at all, will always come substantially later. It takes time to research and write, undertake a peer review, and publish scholarly material. Often that time and distance helps to assess the importance of a given event or determine its place in an overall context.

The kinds of information sources available on a topic that happened in the past are a good indicator of its information cycle. If you decide to research something that’s happening right now, you won’t have the luxury of knowing its information cycle ahead of time. In that case, you should plan to capture the initial burst – or you might come up short on sources of information, if it turns out to have a short information cycle.