

Explore Topics: Software and Data Development

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General Instructions

1. For each page, synthesize the reading and research by writing in complete sentences in essay format.

- a. Use the green instructions in the notes below each page to focus your research and writing.
- b. Write about each question, prompt, or process provided in those notes.
- c. Write a full page of text with lots of detail (about 250 words).
 - i. Don't generalize so much that your writing is devoid of detail.
 - ii. Don't repeat yourself.
- d. Cite each source by adding a hyperlink in the [Title of the Article or law](#).
- e. Do *not* change the template:
 - i. Text must be 14 point Lato left-justified type.
 - ii. Refrain from adding extra margins or double spacing.
 - iii. Do *not* bullet the paragraphs. Write in essay format only.
- f. Add additional pages if you need more room.

2. Add all sources to the Bibliography page.

- a. Include author, year, title, publisher, and URL.
- b. Number or bullet them using the list button.

When in doubt,
write to the instructor for
clarification using
the [Canvas Inbox](#).

Software Development Methodologies

Proprietary software has long been the standard for entrepreneurs and businesses. It is software that can be thought of as a “black box” that does what it was made to do. The box is locked so that only the creator can look inside and change things. The benefit of proprietary software is that it’s reliable and well-documented by the creator. Reputable vendors have a sort of “social contract” to continually update and support their software; they often provide advance notice before ending support. End users can purchase proprietary software understanding the credibility of the creator and knowing there will be resources for solving issues.

The opposite of proprietary software is open-source software. [Pros & Cons of Open Source in Business](#) discusses the pros and cons of Free and Open-Source Software (FOSS) and suggests it may be a good alternative for many business owners. To continue the box simile, FOSS is like a “black box” that is unlocked. End users can choose to be blind to the inner workings, but anyone is allowed to access and contribute to development. One of the best reasons to use open-source software is the initial cost. Open-source software is generally cheap or free, making it accessible to anyone. The caveat is that long-term support can be expensive if the software is not updated often enough or if thorough documentation is not provided. This is less of a concern with proprietary software because it is much more likely to have regular updates and proper documentation. The other major difference is flexibility versus usability. Installing and using proprietary software is usually as simple as running an install wizard and launching the program. This creates a “plug ‘n’ play” experience. Open-source projects tend to have a more involved installation process with more options. This creates a more flexible and tailored experience at the cost of simplicity.

Data Acquisition and Retention

It is becoming increasingly common for major tech companies to collect data from their users and use it for services such as advertisement targeting. In [Google still keeps a list of everything you ever bought using Gmail, even if you delete all your emails](#), Todd Haselton writes that this data is sometimes collected and withheld without the consent of the user. Google's Purchases page stores users' purchase history without an easy way of deleting it. Purchases can only be deleted individually, making a long purchase history impractical to clear. Google claims none of this data is used for advertisement targeting, but it is a service Haselton never wanted or asked for.

This collection and retention of this data may be unwanted, but it's not necessarily a bad thing; that is until the data is handled carelessly or stored insecurely. The [Seven Best Practices for Keeping Sensitive Data Out of Logs](#) by Joe Crobak mentions a security flaw at Twitter in which users' passwords were accidentally logged in plain text on the server. Although this log file is not available to the public, it was accessible by Twitter employees who could have secretly collected and abused the data. Sensitive data, such as personal identification, health records, passwords, and financial data, is incredibly easy to mishandle. Crobak suggests some ways to write code that properly handles sensitive information. The most important thing to do is minimize the places in the code that use the sensitive data. As the number of sections that can directly access the data increases, so does the chance of mishandling the data. It is also important to change the "toString()" method so that it does not return a user's entire profile. Returning only the user's id protects against accidental logging of sensitive information while still providing a handle that can be used to access specific data.

Online Advertising

[Online Advertising: Crash Course Media Literacy #7](#) makes it clear that our internet presence is being tracked at all times. A major contributor to data collection is social media. Studies have shown that the vast majority of users do not read the terms of conditions, sometimes called the terms of service, for their social media platforms. According to the video, it would take 25 days, nearly a month, every year to keep up to date on changes in the terms. This wouldn't be an issue if the terms were just a bunch of rules about being nice to each other, not hacking each other, and not posting plagiarized work. However, companies capitalize on the public's willingness to blindly accept the terms by giving themselves permission to sell users' data to third parties. Companies also reserve the right to ban a user's account without cause.

These companies claim they are being helpful by recommending products and providing relevant advertisements. While this is true for things like recommendations on Netflix, an issue with this is that in the wrong hands, targeted advertising (or more accurately, targeted propaganda; i.e. the Crooked Hillary ad) can lead to a sort of [intellectual incest](#). The term seems ugly because it is supposed to. When an individual is only exposed to ideas that coincide with their own beliefs, they miss out on the ability to learn from new ideas. This affirmation of bias combined with confirmation bias can lead to an increase in social and political tension which can cause clear issues.

The carelessness of the public in regards to their online privacy can also be a threat to national security. As the video points out, the current attitude around security may make it possible for "bad actors" to access and abuse our personal data.

Laws and Regulatory Organizations

The laws and regulations for advertisements on the web are similar to those for other mediums. [Advertising and Marketing on the Internet: Rules of the Road](#) outlines the laws around advertising, primarily advertising on the web. Section 5 of the Federal Trade Commission Act prevents advertisers from distributing ads with “deceptive and unfair acts or practices.” A deceptive advertisement is defined as one that is intended to mislead consumers in order to affect their decision about the product or service. An unfair advertisement causes a substantial injury that outweighs other benefits and is not reasonably avoidable. Furthermore, any claims made must be backed up by the advertiser. These rules apply for all advertisements, digital or not. It is important that computer scientists and software developers understand these laws because liability for an illegal advertisement falls on both the creator and distributor of the advertisement. This means that a website developer who allows a company to advertise on their site is responsible for ensuring the advertisements follow these guidelines. The article recommends that any third party agreeing to distribute advertisements should request proof to back up any claims made by the first party. Any disclaimer must be clear, concise, and not hidden from the customer. Advertisers must demonstrate the product under normal use to avoid misleading the consumer. Any advertiser that promises a refund policy must return dissatisfied customers’ money. Following these guidelines is especially important when advertising to children. Because children have a difficult time evaluating advertising claims, there are special rules for advertisements targeted at children that are outlined by the Children’s Advertising Review Unit (CARU). Additionally, It is illegal for a commercial website to knowingly collect data from children under the age of 13 without parental consent.

Illustration

GDPR Core Rights of the Data Subject



The GDPR Core Rights of the Data Subject infographic outlines the rights of user in regards to their data. All data subjects have the right to access, rectify, and erase their data. Additionally, subjects have the right to object the the processing of their data and/or restrict further processing. Data should be reasonably accessible by subjects over an array of digital devices. In the event that a subject does not approve of the way their data is being processed or handled, that subject has the right to complain to the processor and be represented by an independent, not-for-profit body.

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