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| Advanced Security 1 |
| Lab 1 |
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# Part A

Given that many online applications require the use of login details and passwords, it becomes incredibly easy to log and track any one user’s actions on that website. As a result though, any advertising companies will use cookies to track the website and pages you visit to determine advertisements and content relevant to you. As one continues across the web, a network of advertisers will create and log cookies and information based on your browsing patterns. Two websites may be served by the same operator, so the information sent to advertising companies can quickly track and find you given the information the cookie allows them access to.

Collusion, a Firefox add-on (<http://collusion.toolness.org/>) allows Firefox users to track the people tracking them, keeping track of all information and cookies stored on the computer and compile a list of all websites and services that interlink. PrivacyFix, offered by AVG Software (<http://www.privacyfix.com/start/install>) attempts to block these communications between these additional servers. NoScript (<https://noscript.net/>) also allows users to prevent external scripts from running through their browser without their permission. The Electronic Frontier Foundation (EFF) also advocates for the use of HTTPS, and has created an add-on called HTTPS Everywhere (<https://www.eff.org/HTTPS-everywhere>).

It can be incredibly hard to prevent being tracked, though not impossible. Difficulties arise as many online applications require you to log in to use them, sending data and noting that you are using their services. Once this is done, it is the equivalent of lighting a flare to announce your online presence. A user must block all external communication from their computer and disallow scripts from running, and must also remain anonymous by not using online applications in this manner.

# Part B

The Deep Web is defined by Google as “the part of the World Wide Web that is not discoverable by means of standard search engines, including password-protected or dynamic pages and encrypted networks”. Websites that fall outside of this definition are known to form what is called ‘The Surface Web’, websites that are indexed and easily searchable using standard search engines. Similarly, the Deep Web is often confused with the Dark Web, which is a section of the Deep Web used almost exclusively for the acquisition of illegal goods and services. [1]

The computer scientist Mike Bergman coined the term Deep Web in 2000 [2]. He stated that “searching on the Internet today can be compared to dragging a net across the surface of the ocean. While a great deal may be caught in the net, there is still a wealth of information that is deep, and therefore, missed. The reason is simple: Most of the Web’s information is buried far down on dynamically generated sites, and standard search engines never find it.” It’s currently believed that the Surface web is approximately 0.03% of the total internet, which places the Deep Web at a magnitude of several thousand times bigger than the Surface web [4]. It’s difficult to fully ascertain how large the Deep Web is as typical search engines simply can’t find it.

Tools exist that allow a person to reach the Deep Web. The Tor Browser project seeks to allow people to connect to websites that normally reject access to non-secure web browsers. It is legal to access, however the content viewed and actions one can take may not be legal and as a result precautions must be taken to ensure your own actions are legal.

# Bibliography

1. <http://www.brightplanet.com/2014/03/clearing-confusion-deep-web-vs-dark-web/>
2. <http://www.nytimes.com/2009/02/23/technology/internet/23search.html?th&emc=th>
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