

## The Hidden Web - The Deep Web and The Dark Web

**Internet:** A collection of websites and other digital content – some public ...

### Public

<https://java-teacher.com/>

And some private. Private content requires you to know the URL address, have an account, a username, and a password. The following resource belonging to Mr Black who teaches at Pecanwood, contains private content; you need to know the URL address and have login credentials.

### Private

[https://advtechonline-my.sharepoint.com/personal/mrblack\\_pecanwoodcollege\\_co\\_za/\\_layouts/15/onedrive.aspx?id=%2Fpersonal%2Fmnainar%5Fpecanwoodcollege%5Aco%5Fza%2FDocuments%2FReports%202020&originalPath=aHR0cHM6Ly9hZHZ0ZWNoY25saW5lLW15LnNoYXJlcG9pbmQuY29tLzpmOi9n3BlcnNvbmluY29kY29sbGVnZV9jb196YS9FcfhxLXlBc0pQUUtuaVZhd2VrdFN5UUJaWG8tWF9RZERJNWRyckY4R2tLOEt3P3J0aW1lPVNxcmlNa1RXMTBn](https://advtechonline-my.sharepoint.com/personal/mrblack_pecanwoodcollege_co_za/_layouts/15/onedrive.aspx?id=%2Fpersonal%2Fmnainar%5Fpecanwoodcollege%5Aco%5Fza%2FDocuments%2FReports%202020&originalPath=aHR0cHM6Ly9hZHZ0ZWNoY25saW5lLW15LnNoYXJlcG9pbmQuY29tLzpmOi9n3BlcnNvbmluY29kY29sbGVnZV9jb196YS9FcfhxLXlBc0pQUUtuaVZhd2VrdFN5UUJaWG8tWF9RZERJNWRyckY4R2tLOEt3P3J0aW1lPVNxcmlNa1RXMTBn)

**Search Engine Optimization (SEO)** – Making public websites’ important keywords available to search engines so that they can be indexed/cataloged. Once indexed it becomes “findable” to the public when they type the same keywords into the search bar i.e. you want to find denim jeans on a website that sells casual clothing.

**Search Engines:** Match keywords in the search bar to the same keywords found on **publicly visible** websites. Mr Black’s resource above cannot be indexed by a search engine and is therefore part of the “Deep Web.”

**Deep web.** That part of the Internet not indexed by search engines e.g. your email inbox. The content IS on the normal web but is protected by passwords and firewalls. Other examples - your banking credentials, your medical records and paid for content like online magazines.

The opposite of the deep web is the **surface web**; the surface web is indexed by search engines.

### Advantages of a Deep web search

1. You can use a deep web search engine like DuckDuckGo to search the Deep Web for more complex, sensitive, and detailed information not available in normal/commercial/retail/social centered search engines like Google, Bing and Yahoo.

### Disadvantages of a Deep web search

1. Slower, need to be very specific (you must know what you are looking for).
2. Since the dark web is part of the deep web you may find harmful, illegal, stolen material e.g. stolen medical records are published on the dark web.

NB: Do not click on returned results without the protection of a firewall and VPN or you may find your computer hacked or infected with malware.

**Dark Web.** A small part of the Deep Web. It is not a place and it is not an alternative Internet. It uses the same infrastructure as the regular web but . . . it just has an extra “layer” which is why it is called an overlay. You need a Tor browser to access a website on the Dark Web. A website on the dark web a TLD of onion (not com)

### **What is Tor?**

Tor is free and open-source software (a protocol) for enabling **anonymous communication**. It directs Internet traffic through a free, worldwide, volunteer overlay network, consisting of more than six thousand relays, for concealing a user's location and usage from anyone conducting network surveillance or traffic analysis. (Wikipedia)

It is a true statement that websites and bulletin boards selling illicit goods and illegal services are not indexed and are therefore by default part of the Dark Web.

**Privacy / anonymity.** It is a true statement that your private details, even your identity can be stolen. Therefore protecting your personal details is a good thing. At best you can buy a service called a **VPN that encrypts all your actions and data that you send over the web**. This is legal, legitimate and valuable service.

People use VPN technology and a Tor browser so that they can visit websites anonymously and view illegal goods and services but how do they pay for them? You cannot use your credit card and continue to remain anonymous . . . this is the reason for cryptocurrency like Bitcoin ie to pay directly from one person to another without the intervention, fees and public record keeping of a bank. Today there are companies and services that allow purchases to be made in a cryptocurrency. They take crypto and then convert it back to regular currency. This is done via an anonymous password protected online wallet.

**Cryptocurrency:** Has no real value, it is not physical, it is decentralized. Uses a technology called **blockchain** to create a unique “number”. Blockchain is a number-based technology that ensures trust when a transaction happens between two parties without a third-party referee – it cannot easily be deleted, duplicated, altered, lost or stolen. Think of it as a replacement for the unique serial number that you find on a bank note issued by a central bank. Therefore, cryptocurrencies like Bitcoin, Ethereum, XRP and Litecoin, use blockchain to ensure validity.

**Short answer.** The Deep Web comprises of websites that are not indexed by search engines (for good reasons e.g. paid for content) – when you visit them using your regular browser you are not anonymous. The Dark Web comprises of websites hidden from regular browsers. Using a VPN service provider, a Tor browser and Bitcoin you can find and pay for services and goods while remaining anonymous.

**Bottom line.** Do not install a free Tor browser on your PC and think you are anonymous – you need a firewall and VPN as well\*\*. Do not respond to online offers, products and services that offer you quick, easy money.

\*\* There are special privacy based operating systems like Tails OS