**MIT xPRO Data Engineering Certificate**

**Localhost**

**What Is a Localhost?**

Localhost is a term that is used to represent your local machine’s IP address. It is a default name in computer networks that is used to access the network services running on your local machine through the loopback network interface (Vickers 2021).

**What Is a Loopback Address?**

Normally, when you try to connect to a website using an IP address (or domain name), you are trying to connect to some other system over the network. With a loopback address, you are trying to connect to your own system, which is your local machine. This loopback network interface is most often used when you are trying to test a program or application on your own system to make sure that it is debugged before releasing it to the world over the internet.

Naturally, every device that will need to connect to the internet, such as computers and mobile devices, will need an IP address to connect and be able to communicate with other devices. The original IP address scheme was called IPv4, which stands for internet protocol version 4. By default, the name localhost resolves to the loopback address 127.0.0.1, which is the IPv4 address.

Due to the continuous number of new devices that connect to the internet every day, the number of available addresses for IPv4 is running out. For this reason, a new protocol, IPv6, has been developed to supplement the available addresses and replace IPv4. The IPv6 connection resolves to the IP address 0000:0000:0000:0000:0000:0000:0000:0001, which can be abbreviated to ::1 (Vickers 2021).

The first three numbers, which are 127, are reserved for loopback. Therefore, as soon as TCP/IP sees that an IP address starts with 127, it recognizes that you want to connect to your own computer (Vickers 2021).

What Is a Localhost Used For?

Localhost is generally used by developers, network administrators, cloud administrators, etc. It is primarily used for testing purposes. For example, a localhost may be used for the following:

* Application Testing: Developers and testers can use the loopback connection to test their programs and applications that require an internet connection. These are mostly web-based applications that need to be tested on the internet.
* Site Blocking: Loopback to the localhost can also be used to prevent access to harmful websites that may contain malicious content. This is achieved by blocking access to these kinds of websites and redirecting the IP address to the loopback address.
* Speed Test: Network administrators normally use the localhost to test if the machine and the TCP/IP connection are working correctly by pinging the localhost to test the connection.