

## Tamil Computing



## 18.1 Introduction

“ பிறநாட்டு நல்லறிஞர் சாத்திரங்கள்  
தமிழ்மொழியிற் பெயர்த்தல் வேண்டும்;  
இறவாத புகழுடைய புதுநூல்கள்  
தமிழ்மொழியில் இயற்றல் வேண்டும்;  
மறைவாக நமக்குள்ளே பழங்கதைகள்  
சொல்வதிலோர் மகிமை இல்லை;  
திறமான புலமையெனில் வெளிநாட்டோர்;  
அதை வணக்கஞ் செய்தல் வேண்டும்.”

- மகாகவி பாரதி

Human civilization developed with the innovation of computer in the twentieth century. Computer development began as a early calculating tool and has now become a essential ingredient for gigantic growth for the existence of human life without computers.

It is true that any language will be outdated when it does not have the ability to adapt itself to the changing technologies. Tamil is a living language for thousands of years. Development of modern technologies, does not affect the growth of classical Tamil as it is ready to adopt the growing technological changes. **Tamil is not just a language, it is our identity, our life and our sense.**

“எங்கள் வாழ்வும், எங்கள் வளமும் மங்காத தமிழென்று சங்கே முழங்கு” – புரட்சி கவி.

## 18.2 Tamil in Internet

We know that the internet today plays a vital role in every man's life. Internet is the best information technological device, through which we get know information.

In 2017 a study conducted by KPMG a Singapore based organization along with google, reported that, Tamil topped the list, among the most widely used languages in India, where 42% are using the Internet in Tamil

**68%<sup>[9]</sup> Internet users consider local language digital content to be more reliable than English**

**Currently, Tamil (42%<sup>[9]</sup>) has the highest internet adoption levels followed by Hindi and Kannada among the Indian language users**

**Language wise internet adoption levels for Indian language users – 2016<sup>[9]</sup>**



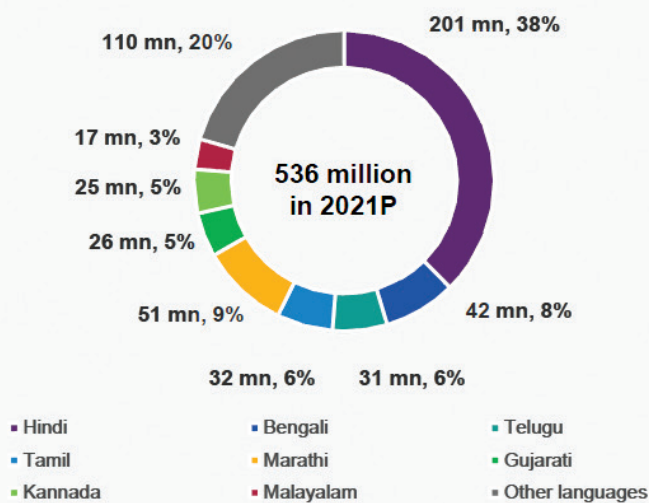
As per study, by 2021, 74% of people in India will access internet using Tamil and it will be in the top usage of Internet in India.

**By 2021, the number of Hindi internet users will be more than English users**

**Marathi, Bengali, Tamil and Telugu internet users are expected to form 30%<sup>[12]</sup> of the total Indian language internet user base**

**Tamil and Kannada speakers have the highest propensity to adopt internet in future with the Indian language enablement of the ecosystem**

**Language wise internet users 2021P<sup>[12]</sup>**



Language	Adoption propensity
Hindi	54%
Bengali	46%
Telugu	60%
Tamil	74%
Marathi	43%
Gujarati	43%
Kannada	74%
Malayalam	44%
Other languages	NA*

\* Propensity to adopt internet in future has been ascertained for select 8 Indian languages

These statistical data will be useful to improve internet services in Tamil.

### 18.3 Search Engines in Tamil

The “Search Engines” are used to search any information from the cyber space. Although there are many search engines, but only a few of them are frequently in use. In the top ten search engines, Google, Bing and Yahoo take first three places respectively. Google and Bing provide searching facilities in Tamil, which means you can search everything through Tamil. The Google search engine gives you an inbuilt Tamil virtual keyboard.

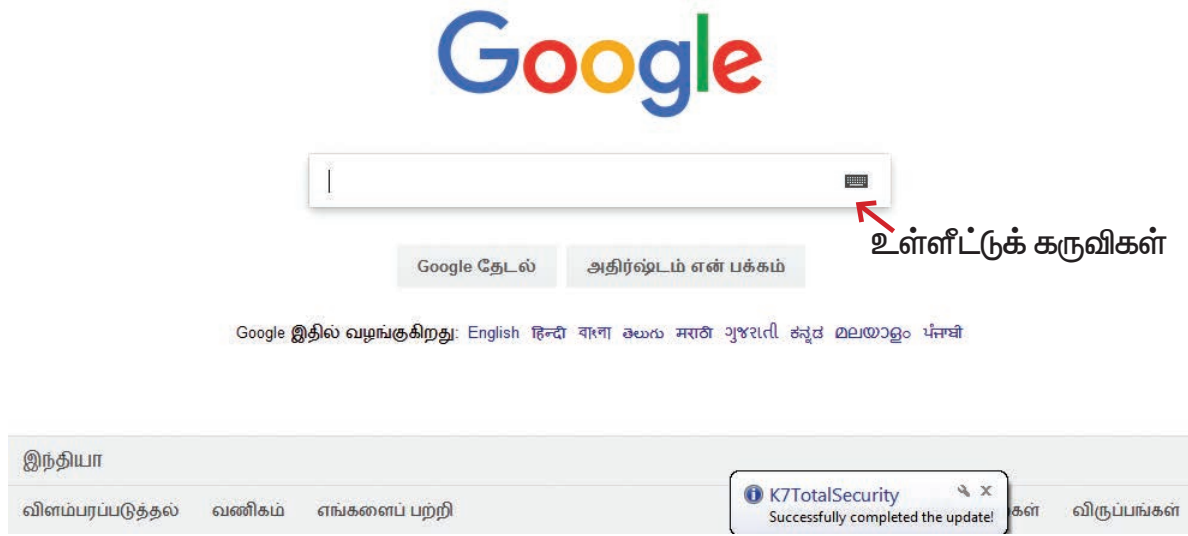


Figure 18.1(a) Google Search Engine (India)

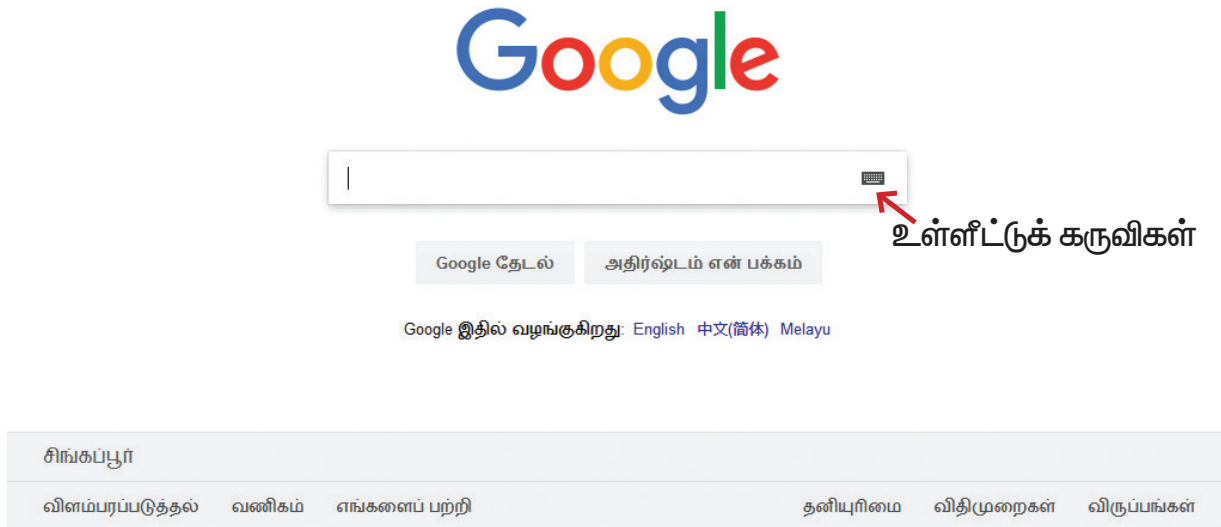


Figure 18.1(b) Google Search Engine (Singapore)

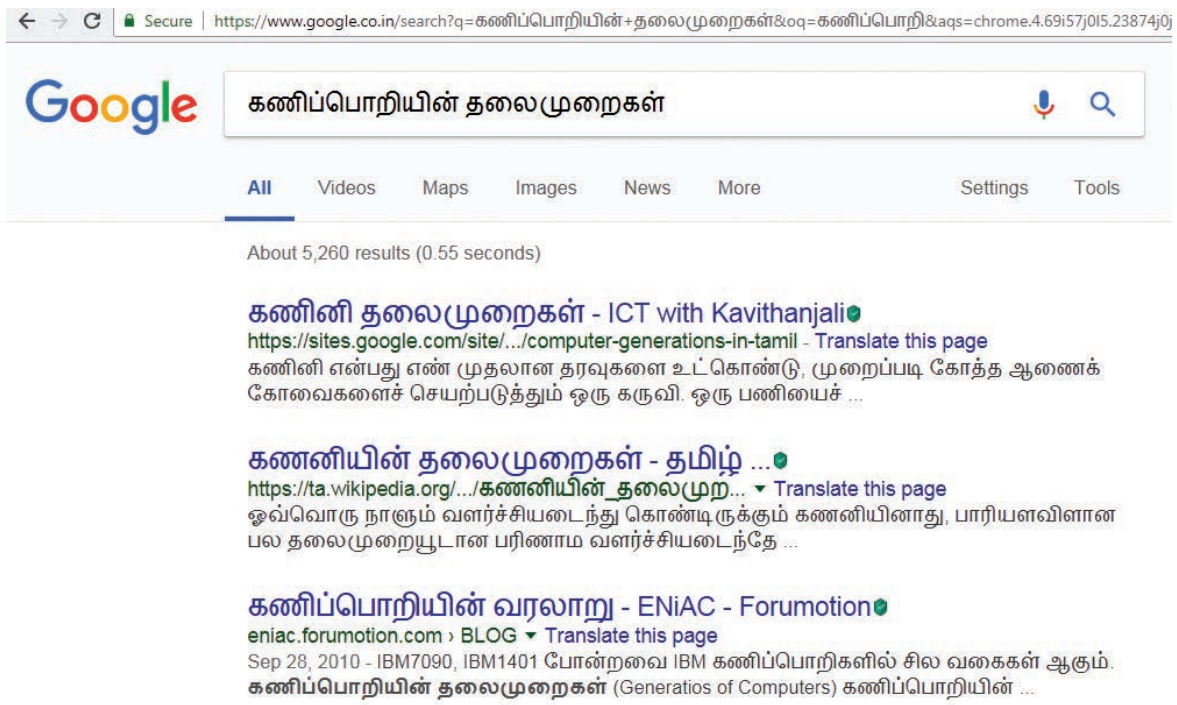


Figure 18.2 Searching in Tamil

#### 18.4 e – Governance:

Getting Government services through internet is known as e-Governance. Govt. of Tamilnadu has been giving its services through Internet. One can communicate with Govt. of Tamilnadu from any corner of the World. One can get important announcements, government orders, and government welfare schemes from the web portal of Govt. of Tamilnadu.



Figure 18.3 Official Website of Govt. of Tamilnadu



E-Governance through Tamil	Web Address
Official Website of Govt. of Tamilnadu	<a href="http://www.tn.gov.in/ta">http://www.tn.gov.in/ta</a>
Department of Agricultural Engineering	<a href="http://www.aed.tn.gov.in/">http://www.aed.tn.gov.in/</a>
Department of Environment	<a href="http://www.environment.tn.nic.in/">http://www.environment.tn.nic.in/</a>
Directorate of Govt. Examinations	<a href="http://www.dge.tn.nic.in/">http://www.dge.tn.nic.in/</a>
Tamilnadu Health Department	<a href="http://www.tnhealth.org/">http://www.tnhealth.org/</a>
Tamilnadu Micro, Small and Medium Enterprises Department	<a href="http://www.msmeonline.tn.gov.in/">http://www.msmeonline.tn.gov.in/</a>
Rural Development and Panchayat Raj Department	<a href="http://www.tnrd.gov.in/">http://www.tnrd.gov.in/</a>
Backward, Most Backward and Minorities Welfare Department	<a href="http://www.bcmbcmw.tn.gov.in/">http://www.bcmbcmw.tn.gov.in/</a>
Tamilnadu Forest Department	<a href="https://www.forests.tn.gov.in/">https://www.forests.tn.gov.in/</a>
Hindu Religious and Charitable Endowments Department.	<a href="http://www.tnhrce.org/">http://www.tnhrce.org/</a>
Tamil Nadu Public Service Commission (TNPSC)	<a href="http://www.tnpsc.gov.in/tamilversion/index.html">http://www.tnpsc.gov.in/tamilversion/index.html</a>
Official Website of Govt. of Srilanka	<a href="https://www.gov.lk/index.php">https://www.gov.lk/index.php</a>

Outside India, Government of Srilanka provides all their services through the official website in Tamil.

### 18.5 e-Library

E-Libraries are portal or website of collection of e-books. Tamil e-Library services provide thousands of Tamil Books as ebooks mostly at free of cost. It is the most useful service to Tamil people who live far away from their home land.

Tamil e-Library	Website address
Tamilnadu School Education and Teacher Education Training Textbooks and Resource Books	<a href="http://www.textbooksonline.tn.nic.in/">http://www.textbooksonline.tn.nic.in/</a>
Tamil Virtual Academy	<a href="http://www.tamilvu.org/library/libindex.htm">http://www.tamilvu.org/library/libindex.htm</a>
Connemara Public Library	<a href="http://connemarapubliclibrarychennai.com/Veettukku_oru_noolagam/index.html">http://connemarapubliclibrarychennai.com/Veettukku_oru_noolagam/index.html</a>
Tamil Digital Library	<a href="http://tamildigitallibrary.in/">http://tamildigitallibrary.in/</a>
Chennai Library	<a href="http://www.chennailibrary.com/">http://www.chennailibrary.com/</a>
Thamizhagam	<a href="http://www.thamizhagam.net/parithi/parithi.html">http://www.thamizhagam.net/parithi/parithi.html</a>

Project Madurai	<a href="http://www.projectmadurai.org/pmworks.html">http://www.projectmadurai.org/pmworks.html</a>
Old Books and Manuscripts	<a href="http://www.tamilheritage.org/old/text/ebook/ebook.html">http://www.tamilheritage.org/old/text/ebook/ebook.html</a>
Noolaham	<a href="http://www.noolaham.org/wiki/index.php/">http://www.noolaham.org/wiki/index.php/</a>
Anna Centenary Libraray	<a href="http://www.annacentenarylibrary.org/">http://www.annacentenarylibrary.org/</a>

## 18.6 Tamil Typing and Interface software

Tamil is mostly used to type documents in word processors and search information on the internet. Typing Tamil using Tamil interface software is a familiar one among the different methods of typing. This is the simplest method of typing Tamil in both Computer and Smart phones.

### 18.6.1 Familiar Tamil Keyboard Interface:

- NHM Writer, E-Kalappai and Lippikar – are familiar Tamil keyboard interfaces software that is used for Tamil typing which works on Tamil Unicode, using phonetics.
- Sellinam and Ponmadal – are familiar Tamil keyboard layouts that works on Android operating system in Smart phone using phonetics.



Figure 18.4 eKalappai Opening screen

## 18.7 Tamil Office Automation Applications

Famous Office automation software like Microsoft Office, Open Office etc., provides complete Tamil interface facility. These softwares are downloadable and installed in your computer. After installation, your office automation software environment will completely

change to Tamil. Menu bars, names of icons, dialog boxes will be shown in Tamil. Moreover, you can save files with Tamil names and create folders with Tamil names.

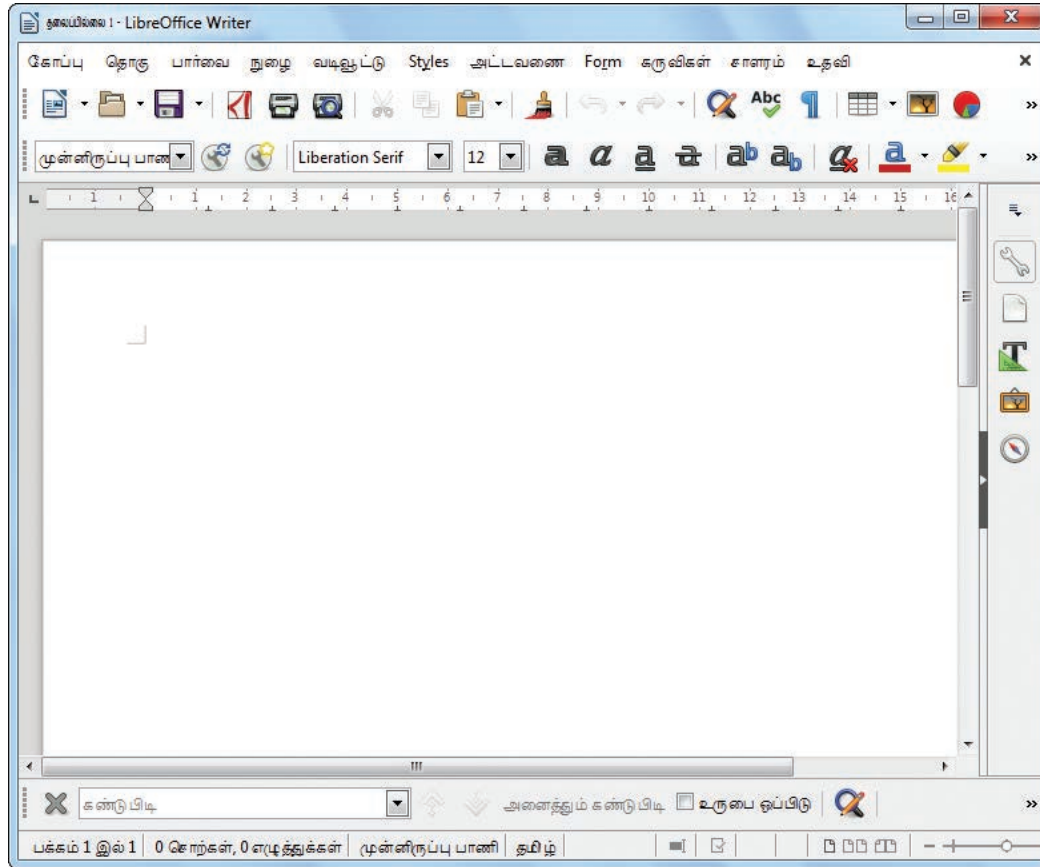


Figure 18.5 Libra Office Writer Environments in Tamil

Apart from that Tamil Libra Office, Tamil Open Office, Azhagi Unicode Editor, Ponmozhi, Menthamiz, Kamban, Vani are office automation software working exclusively for Tamil. You can use these applications to work completely in Tamil.

### 18.8 Tamil Translation Applications

Thamizpori (தமிழ்பொறி) is a Tamil translation application having more than 30000 Tamil words equalent to English words. Using this application, we can translate small english sentences into Tamil. Google also gives an online translation facility, using this online facility we can translate from Tamil to any other language and vice versa.

### 18.9 Tamil Programming Language

Programming languages to develop software in computers and smart phones are available only in English. Now, efforts are taken to develop programming languages in Tamil. Based on Python programming language, the first Tamil programming language “Ezhil” (எழில்) is designed. With the help of this programming language, you can write simple programs in Tamil.



## **18.10 Tamil Information Interchange Coding Systems**

### **TSCII (Tamil Script Code for Information Interchange)**

Computers handle data and information as binary system. Every data should be converted into binary when it is fed into a computer system. You have learnt about all these things in the first unit of this text book. Computers use ASCII encoding system to handle data and information. The ASCII encoding system is applicable only for handling English language. Therefore, TSCII (Tamil Script Code for Information Interchange) is the first coding system to handle our Tamil language in an analysis of an encoding scheme that is easily handled in electronic devices, including non-English computers. This encoding scheme was registered in IANA (Internet Assigned Numbers Authority) a unit of ICANN.

### **ISCII (Indian Script Code for Information Interchange)**

This is one of the encoding schemes specially designed for Indian languages including Tamil. It was unified with Unicode.

#### **Unicode:**

Unicode is an encoding system, designed to handle various world languages, including Tamil. Its first version 1.0.0 was introduced in October 1991. When Unicode was introduced it could handle nearly 23 languages including Tamil. Among the various encoding scheme, Unicode is the best suitable to handle Tamil.

## **18.11 Tamil Operating System**

An operating system is needed to access electronic systems such as computer and smart phone. Microsoft Windows is very popular operating system for personal computers. Linux is another popular open source operating system. Operating systems are used to access a computer easily. An operating system should be easy to work and its environment should be in an understandable form. Thus, all operating systems used in computers and smart phones are offered in Tamil environment.

Windows Tamil Environment interface should be downloaded and installed from the internet. It displays all window elements such as Taskbar, desktop elements, names of icons, commands in Tamil.

## **18.12 Organisation and projects to develop Tamil**

### **Tamil Virtual Academy:**

With the objectives of spreading Tamil to the entire world through internet, Tamil Virtual University was established on 17th February 2001 by the Govt. of Tamilnadu. Now, this organisation functions with the name of “Tamil Virtual Academy”. It offers different courses in Tamil language, Culture, heritage etc., from kindergarten to under graduation level.





Website: <http://www.tamilvu.org/index.php>

### **Tamil Language Council, Singapore**

With the objectives of promoting the awareness and greater use of Tamil among the Singaporeans, in 2001 the council of Tamil Language was formed by the ministry of Information Communications and Arts, Govt. of Singapore. The council is called as “வளர்தமிழ் இயக்கம்”.



Website: <http://tamil.org.sg/ta>

### **Madurai Project**

Project Madurai is an open and voluntary initiative to collect and publish free electronic editions of ancient tamil literary classics. This means either typing-in or scanning old books and archiving the text is one of the most readily accessible formats for use on all popular computer platforms.

Since its launch in 1998, Project Madurai etexts released are in Tamil script form as per TSCII encoding. Since 2004 we have started releasing etexts in Tamil unicode as well.

Web Site: <http://www.projectmadurai.org/>

### **Tamil Wikipedia:**

Wikipedia is a open source encyclopedia where any person can write an article about any subject. There are more than One lakh articles in Tamil Wikipedia.

**Web Site: <https://ta.wikipedia.org/>**

In order to make Tamil as a living language, it is the duty of every Tamilian to actively use Tamil in the development of technology.

### Points to Remember:

- Tamil topped the list of the most widely used regional languages in India by the end of 2016, among 42% are using the Internet.
- Google and Bing provide searching facilities in Tamil.
- Getting Government services through internet is known as e-Governance.
- Tamil e-Library services provide thousands of Tamil Books as ebooks mostly at free of cost.
- Thamizpori (தமிழ்பொறி) is a Tamil translation application having more than 30000 Tamil words equalent to English words.
- The first Tamil programming language is “Ezhil” (எழில்)
- Unicode is an encoding system, designed to handle various world languages, including Tamil.
- Windows Tamil Environment interface should be downloaded and installed from internet.

### Evaluation



#### Very Short Answers

1. List the search engines supported by Tamil language.
2. What are the keyboard layouts used in Android?
3. Write a short note about Tamil Programming Language.
4. What is TSCII?
5. Write a short note on Tamil Virtual Academy.

\*\*\*\*





WORD	MEANING
Paradigm	Organizing principle of a program.
Abstraction	Abstraction refers to showing only the essential features without revealing background details
Modularity	Designing a system that is divided into a set of functional units (named modules) that can be composed into a larger application.
<i>Base class</i>	A class whose properties are inherited by other newly created classes .Also called as parent class
Derived class	A class which inherits the properties of the base class. Also called as child class or subclass.
<u>Class</u>	Class represents a group of similar objects that share common properties
Object	Identifiable entity with some characteristics and behaviour
Encapsulation	Mechanism by which the data and function sare bound together into a single unit
Inheritance	Process of creating new classes called derived classes, from the existing or base classes.
Signature	Number of argument and type of argument
Polymorphism	many forms
Default argument	Initializing the argument with a value
Base Class:	A class from which another class inherits (Also called Super class or parent class)
Derived Class:	A class inheriting properties from another class. (Also called Sub class)
Inheritance	The process of one class to inherit properties from another class
Inheritance Hierarchy (Inheritance Path):	The chain depicting relationship between a base class and the derived class (Also called Derivation Hierarchy)
Visibility mode	The public, private or protected specifier that controls the visibility and availability of a member in a class
Vulnerability	The possibility of being attacked or harmed.
Ethics	Moral principles that govern a person's behaviour or the conducting of an activity.



Cyber	Characteristic of the culture of computers, information technology, and virtual reality.
Computer Crime	Computer crime is an intellectual crime to manipulate computer system.
Authenticity	The quality of being real or true.
Sabotage	Deliberately destroy, damage, or obstruct.
Perpetrator	A person who carries out a harmful, illegal, or immoral act.
Software Piracy	Software Piracy is the copyright violation of software created originally by one person and illegally used by someone else.
Hacking	Hacking is gaining unauthorized access to computer system without the owner's permission.
Cracking	Cracking is gaining unauthorized access to computer systems to commit a crime, such as stealing the code to make a copy-protected program run thus denying service to legitimate users.
Malicious	Intentionally doing harm.
Freeware	Freeware is a software available free of charge.
Shareware	Shareware is a software that is distributed free of charge on a trial basis for a limited time.
Phishing	Phishing is a term used to describe a malicious individual or group of individuals who scam users by sending e-mails or creating web pages that are designed to collect an individual's online bank, credit card, or other login information.
Fraudulent	Dishonest, cheating, swindling, corrupt, criminal, illegal, unlawful.
Anonymous	Unnamed, nameless, unidentified, unspecified.
Cookies	Cookies are messages that web servers pass to your web browser when you visit Internet sites
Tampering	Interfere in order to cause damage.
Immune	Resistant to a particular infection or toxin.
Firewall	A firewall is a network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules.
Proxy server	A proxy server is a gateway between a local network and a larger-scale network such as the Internet. Proxy servers provide increased performance and security.
Encryption	Encryption is the process of encoding a message or information so that only authorized users can decrypt it
Decryption	Decryption is the process of decoding the encrypted text by converting it back into normal text.

