**Computer and internet basics**

**Fundamentals**

**Internet**

The internet is a globally connected network system that uses TCP/IP to transmit data via various types of media.

**IP (IPv4, IPv6, bits, layout)**

An IP address, or simply an "IP," is a unique address that identifies a device on the Internet or a local network.

**Domain names**

A domain name is a unique name that identifies a website.

**ISP**

Stands for "Internet Service Provider." An ISP provides access to the Internet.

**DNS**

Stands for "Domain Name System. Thanks to DNS, you can visit a website by typing in the domain name rather than the IP address.

**Protocol**

A protocol is a standard set of rules that allow electronic devices to communicate with each other.

**Data transport**

**How is data transmitted?**

Examples of such channels are copper wires, optical fibers, wireless communication channels, storage media and computer buses.

**TCP**

TCP is a fundamental protocol within the Internet protocol suite — a collection of standards that allow systems to communicate over the Internet. When the packets reach their destination, they are reassembled into a single file or other contiguous block of data.

**Packet**

A packet is a small amount of data sent over a network, such as a LAN or the Internet. When the packets reach their destination, they are reassembled into a single file or other contiguous block of data.

**URL**

A URL is the address of a specific webpage or file on the Internet.

**Router**

This is a hardware device that routes data (hence the name) from a local area network (LAN) to another network connection.

**Fault tolerant**

Fault-tolerant technology is a capability of a computer system, electronic system or network to deliver uninterrupted service, despite one or more of its components failing.

**Redundancy**

Duplicate devices that are used for backup purposes.

**Information and data**

**Information**

Information is stimuli that has meaning in some context for its receiver.

**Binary**

Binary (or base-2) a numeric system that only uses two digits — 0 and 1.

**Logic gates**

Logic gates take an input of two binary values, and output a single value of a 1 or 0.

* AND && OR || (NOT, XOR)

**Bit**

A bit (short for "binary digit") is the smallest unit of measurement used to quantify computer data. It contains a single binary value of 0 or 1.

**Byte**

A byte is a unit of measurement used to measure data. One byte contains eight binary bits, or a series of eight zeros and ones. Therefore, each byte can be used to represent 2^8 or 256 different values.

**KiloByte**

A kilobyte is 103 or 1,000 bytes. The kilobyte (abbreviated "K" or "KB") is the smallest unit of measurement greater than a byte.

**ASCII**

Stands for "American Standard Code for Information Interchange." ASCII character encoding provides a standard way to represent characters using numeric codes.

**Hardware**

**ALU**

Stands for "Arithmetic Logic Unit." An ALU is an integrated circuit within a CPU or GPU that performs arithmetic and logic operations.

**CPU**

The CPU is the primary component of a computer that processes instructions.

**RAM**

Stands for "Random Access Memory," and is pronounced like the male sheep. RAM is made up of small memory chips that form a memory module.

**ROM**

ROM is memory containing hardwired instructions that the computer uses when it boots up, before the system software loads. In PCs, the instructions are read from a small program in the ROM, called the BIOS (Basic Input/Output System).

**GigaHz**

While gigahertz is most commonly used to measure processor speed, it can also measure the speed of other parts of the computer, such as the RAM and backside cache.

**HDD**

Stands for "Hard Disk Drive." "HDD" is often used interchangeably with the terms "hard drive" and "hard disk."

**SSD**

Stands for "Solid State Drive." An SSD is a type of mass storage device similar to a hard disk drive (HDD).