Topic 6. Networks: Types of Networks (wired, wireless,1 )LAN, 2)WAN, 3)MAN, 4)PAN).  
5)Network Topologies. 6)Web Basics. 7)The Internet Technology.8) IoT.

Networking allows two or more computer systems to exchange information and share resources and peripherals.

There are different types of networks.

1)

LANS are usually placed in the same building, They can be built with two main types of architecture:  
**PEER-TO-PEER** , where the two computers have the same capabilities, or **CLIENT-SERVER**, where one computer acts as the server containing the main hard disk and controlling the other workstations or nodes(узлы), all the devices linked in the network (e.g. printers, computers, etc)

Computers in a LAN need to use the same protocol, or standard of communication, **Ethernet** is one of the most common protocols for LANs,

A **ROUTER**, a device that forwards data packets, is needed to link a LAN to another network, e.g. to the Net.

Most networks are linked with cables or wires but new WiFi**, WIRELESS FIDELITY(беспроводная верность)**, technologies allow the creation of WLANs, where cables or wires are replaced by radio waves.

To build a WLAN you need access points, radio-based receiver-transmitters that are connected to the wired LAN, and wireless adapters installed in your computer to link it to the network.

**HOTSPOTS** are WLANS available for publi use in places like airports and hotels, but sometimes the service is also available outdoors (eg, university campuses, squares, etc.)

2)

WANs (Wide Area Networks)

WANS have no geographical limit and may connect computers or LANs on opposite sides of the world. They are usualy linked through telephone lines, fibre-optic cables or satellites. The main transmission paths within a WAN are high-speed lines called **BACKBONE(что-то по типу позвоночника)**

Wireless WANS use mobile telephone networks.

‘The largest WAN in existence(существующее) is the Internet.

3)

MAN(metropolitan area network) (городская сеть)

An city computer network connects computers within a city; it is a network smaller than a WAN but larger than a LAN.

4)

PAN(personal area network)

A personal network is a network built "around" a person. PAN is a computer network that is used to transfer data between devices such as computers, phones, tablets, and personal PDAs.

5)Network topology

Topology refers to the shape of a network. There are three basic physical topologies.

\* Star: there is a central device to which all the workstations are directly connected.

This central position can be occupied by a server, or a **HUB**(центр), **a connection point of the elements of a network that redistributes the data**

\*Bus: every workstation is connected to a main cable called a bus.

\*Ring: the workstations are connected to one another in a closed loop configuration

/There are also mixed topologies like **the tree**, (a group of stars connected to a central bus.)

6) What the Web is

The World Wide Web, Web or WWW is a network of documents that works in a hypertext environment, using text that contains links, hyperlinks to other documents.

The files, web pages, are stored in computers, which act as servers. Your computer, the client, uses **A WEB BROWSER**, a special program to access and download them. The web pages are organized in **WEBSITES**, groups of pages located on the Web, maintained by a webmaster, the manager of a website.

The Web enables you to post and access all sorts of interactive multimedia information

and has become a real **information highway.**

**7)**

**What the Internet is**

**The Internet** is an International computer Network made up of thousands of networks linked together. All these computers communicate with one another, they share data, resources, transfer information, etc. To do it they need to use the same language or protocol:

**TCP / IP (Transmission Control Protocol / Internet Protocol)**

and every compute is given an address or   
**IP number**. **This number is a way to identify the computer on the Internet.**

**8) IoT(Internet of things)**

**(Internet of Things, IoT)** is a set of physical objects connected to the Internet and exchanging data. The idea of ​​IoT can greatly expand many of the **boundaries(границы)** of our lives and help us  
 **establish(в создании(учреждении)** a more convenient, smarter and safer world. Examples of the Internet of Things range from wearables like smartwatches to smart homes that can, for example, control and automatically change lighting and health levels.