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RESEARCH ARTICLE

CREATING DIGITAL DICTIONARIES OF LOCAL LANGUAGES AND UPGRADING SCHOOL TEACHERS' PATENT KNOWLEDGEIN KONAWE AND EAST KOLAKA REGENCIES

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Abstract

Community Service Activities by a Team of Lecturers (Lecturers) of the Faculty of Law, Lecturers of Faculty of Cultureand Lecturers of Informatics Engineering Faculty of Engineering Haluoleo University at SDN 2 Puosu and SDN 1 SendangMulyasari in Konawe and East Kolaka Regencies, Southeast Sulawesi Province. This activity was carried out for 6 months starting from observation, coordination and consolidation with SDN 2 Puosu and SDN 1 SendangMulyasari followed by preparation of teaching materials, IPR / Patent laws, provision of Digital Dictionary Applications and Information Systems, implementation of activities and preparation of reports.The purpose of this Community Service activity is to provide knowledge about IPR / Patent Laws for Teachers and Students of SDN 2 Puosu and SDN 1 SendangMulyasari in Konawe and East Kolaka Regencies to implement the Creation of Regional Language Digital Dictionaries that can be used for learning students and teachers through the knowledge transfer process. And campaigning for pirated IPR / Patent laws and the use of Regional Language Digital Dictionary Copyrights to create Digital Dictionary Applications and Information Systems that can be used for students and teachers to learn at the office and at home.Some important materials presented in this Community Service Activity are socializing IPR / patent laws, understanding patent laws, copyright use of digital dictionaries of local languages, making applications and digital dictionary information systems, and others.The results obtained from this activity are expected to be able to understand IPR / Patent Laws and Copyright Use of Regional Language Digital Dictionaries for making Digital Dictionary Applications and Information Systems, especially for Teachers and Students of SDN 2 Puosu and SDN 1 SendangMulyasari in Konawe and East Kolaka Regencies, as well as additional knowledge and insight into the world of information technology. And it is hoped that it can help spread IPR / Patent laws and Copyright Use of Digital Regional Language Dictionaries as a form of implementation and educate students and teachers regarding the preservation of regional languages.

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Introduction:-

Background

Intellectual Property Rights in relations between humans and between countries including Indonesia is something that cannot be denied. This fact is a consequence of the participation of the Indonesian government as a participating country in the WTO establishment agreement and other agreements related to the WTO, especially those related to international agreements / conventions in the field of Intellectual Property Rights (IPR). At a glance, the definition of IPR is the right to property arising or born due to human intellectual abilities in the fields of science, art, literature or technology, which are born or created with the sacrifice of energy, time, thought and often at great expense. Therefore, the works produced have a value with high economic benefits, so that for the business world these works can become company / industry assets.

IPR issues on the one hand relate to the issue of economic liberalization, and on the other hand deal with the social, cultural, and economic conditions of Indonesian society. The socio-cultural conditions of the Indonesian people are still in the transition period of industrial society which not all of them understand and understand IPR issues that were previously unknown to them, because IPR which is property rights over intellectual property did not originate from Indonesian society, but came from the people of developed countries to protect their intellectual works which incidentally the mindset of the people is different from Indonesian society. In addition, the economic situation of the Indonesian people is still far from the level of per capita income of developed countries, causing the meaning and understanding of IPR in some Indonesian people to still experience various problems. Industrial transition society is described as a society that is undergoing changes from an agrarian society with a communal-traditional character to an industrial society with a modern individual character. This change is related to the structure of community relations that have not been completed to a more rational and commercial style as a result of the development process carried out.

In Indonesian legal society which is still in a transitional state from agrarian society to industrial society, many problems arise regarding the implementation of the law on IPR, including in rural communities whose livelihoods are transitioning from farmers to small industrial communities, due to the demands of an increasingly globalized world economy. The demands of doing business, including business in small industrial societies, have changed due to the growing climate of business competition. One of the main driving factors is the narrowing world boundaries. In addition, technological advances have also resulted in the boundaries of business ethics getting thinner. This has led to the occurrence of various IPR violations, such as plagiarism of well-known trademarks that have been registered, theft of IPR from other nations which the community of intellectual work creators has not had time to register.

In relation to the protection of intellectual property, the Indonesian government, after ratifying international agreements related to TRIPs (Trade Related Aspects of Intellectual Property Rights), has enacted and updated various laws and other regulations governing intellectual property rights. After the enactment of various laws and regulations on IPR, the Indonesian people are bound to implement the law, because there is an adage in law that once a law is enacted, everyone is considered to know about the law so that they are bound by the law. In reality, not everyone knows / understands even though the law has long been promulgated.

Haluoleo University, Faculty of Law, Faculty of Arts and Engineering, Department of Informatics Engineering as one of the higher education institutions in the city of kendari which is engaged in law and information technology, has a very important role to educate the public on skills in using networking hardware and software for the benefit of making electronic devices by introducing theintellectual property rights / patent law to villages and communities in east kolaka.

In order to provide education and training to understand the IPR / Patent Law for Teachers and Students of SDN 2 Puosu and SDN 1 SendangMulyasari in Konawe and East Kolaka Regencies to implement the Digital Creation Dictionary of Regional Languages that can be used for learning students and teachers in Konawe and East Kolaka Regencies, as well as additional knowledge and insight into the world of information technology and is expected to help spread IPR / Patent laws and the use of Regional Language Digital Dictionary Creation for making Regional Language Digital Dictionary Applications as a form of implementation and educating students and teachers related to regional language preservation, the team of lecturers from the Faculty of Law, Faculty of Culture and Informatics Engineering Lecturers at the Faculty of Engineering, Haluoleo University have prepared themselves to provide integrated information and training through the activity "Create a Digital Dictionary of Regional Languages and

Upgrading Knowledge of Patent Law for School Teachers in Konawe and East Kolaka Regencies". This education and training is one of the elements in the three obligationsof higher education, namely community service activities.

Problem Formulation

Based on the situation analysis above, and given the urgency in order to improve the quality of teaching resources at Haluoleo University Kendari, especially lecturers within the Faculty of Law, Faculty of Arts and Faculty of Engineering and to improve the quality of national education, the problems that can be formulated are as follows:

1. How to provide education and training to understand the IPR / Patent Law, especially for teachers and students of SDN 2 Puosu and SDN 1 SendangMulyasari in Konawe and East Kolaka Regencies?
2. How to provide education and training to understand the use of the Regional Language Digital Dictionary for the creation of the Regional Language Digital Dictionary Application as a form of implementation and educating students and teachers related to the preservation of regional languages, especially for the Teachers and Students of SDN 2 Puosu and SDN 1 SendangMulyasari in Konawe and East Kolaka Regencies?
3. How to implement an understanding of the IPR / Patent Law to understand the Copyright Use of Regional Language Digital Dictionaries for the creation of Regional Language Digital Dictionary Applications as a form of implementation and educating students and teachers related to the preservation of regional languages, especially for the Teachers and Students of SDN 2 Puosu and SDN 1 SendangMulyasari in Konawe and East Kolaka Regencies?
4. How is the assistance for the Teachers and Students of SDN 2 Puosu and SDN 1 SendangMulyasari in Konawe and East Kolaka Regencies to understand the Use of Regional Language Digital Dictionary Creation in order to make Regional Language Digital Dictionary Applications as a form of implementation and educating students and teachers related to the preservation of regional languages?

Method Of Implementation

The methods that will be used in the Education and Training activities on IPR / Patent Law and knowing the use of the Regional Language Digital Dictionary Application as a form of implementation and educating students and teachers of SDN 2 Puosu and SDN 1 SendangMulyasari in Konawe and East Kolaka Regencies are:

1. Lecture method in the form of presentation of material by resource persons.
2. Discussion and question and answer method, service participants will be equipped with knowledge of IPR / Patent Law and know the use of Regional Language Digital Dictionaries to make Regional Language Digital Dictionary Applications.
3. Discussion and question and answer method, service participants will be provided with knowledge and mastery of IPR / Patent Law material and know the Use of Regional Language Digital Dictionaries for making Regional Language Digital Dictionary Applications, followed by a demonstration of installation and use to be trained to the target audience and continued with questions and answers, so that a complete picture of the competencies to be trained is obtained.
4. Installation of the Digital Dictionary of Local Languages for Teachers and Students.
5. Practice of using the example of the Digital Regional Language Dictionary Application that has been installed.
6. Assignment Method. In this activity, trainees will receive a transfer of knowledge about IPR / Patent Law and know the use of Regional Language Digital Dictionaries for making Regional Language Digital Dictionary Applications, as well as how to install and use them.

Discussion:-

IPR/Patent Protection

Copyright according to the Directorate General of IPR contained in the guidebook of Intellectual Property Rights (2006: 09) is the exclusive right for the creator or recipient of the right to publish or reproduce his creation or give permission for it without prejudice to restrictions under applicable laws and regulations.

By announcement, this includes the right to sell, exhibit, distribute and so forth using any means including through the internet media so that the creation can be enjoyed by others. Meanwhile, the creator is a person or several people together who, based on their inspiration, produce a creation based on their ability of mind, imagination, dexterity, skill or expertise that is expressed in a unique and personal form. A creation is the result of any work of the creator that shows its originality in the field of science, art, or literature. The protection of a creation arises automatically from the moment it is realized in a tangible form. Registration of a work is not an obligation. However, the creators and copyright holders who register their creations will get a registration letter of creation that can be used as initial evidence in court if a dispute arises in the future against the creation.

The legal basis of copyright protection is Law No. 19 of 2002 on Copyright with various implementing regulations. Patent rights based on the explanation of the Directorate General of IPR (2006: 17) is an exclusive right granted by the state to the inventor on the results of the invention / discovery in the field of technology for a certain time to carry out its own invention or give consent to other parties to implement it. By invention, we mean an inventor's idea that is poured into a specific problem-solving activity in the field of technology, which can be in the form of a product or process, or the improvement and development of a product or process. Inventor is a person who alone or several persons who jointly carry out an idea that is poured into an activity that produces an invention. The legal basis of patent protection is Law No. 14/2001 on Patents and various laws and regulations related to patent protection. The protection of patent rights also includes the protection of simple patents.

Trademark Rights is a "sign" in the form of a bar, name, word, letters, numbers, color arrangement or a combination of these elements that have differentiating power and are used in trading activities of goods and services (IPR Handbook, 2006: 30). Trademark functions are as: 1) an identifying mark to distinguish the production produced by a person or several people together or a legal entity with the production of other people or other legal entities; 2) as a promotional tool, so that promoting their products is enough to mention the brand; 3) as a guarantee of the quality of the goods; 4) shows the origin of the goods/services produced, this is often known as geographical indication. The creations of Imogiri batik craftswomen can also be protected by trademark rights if they register their creations with the Directorate General of IPR by using certain brands, if they want the products of their creations for various functions. The protection of IPR with trademark rights is regulated in Law No. 15 of 2001 concerning Trademarks. in this Law also includes protection of geographical indication rights and indications of origin.

Geographical indication is a sign indicating the region of origin of an item that due to geographical environmental factors including natural factors, human factors, or a combination of both factors provide certain characteristics and quality of the goods produced. While the indication of origin is a sign that meets the provisions of a geographical indication sign that is not registered or merely shows the origin of a good or service.

The law that regulates this industrial design is Law No. 31 Year 200 on Industrial Design. The scope of industrial designs that receive protection are: 1) new industrial design; 2) not contrary to the prevailing laws and regulations, public order, religion, or decency. The term of protection of industrial design right is 10 years from the date of acceptance. The subject of industrial design right is the designer or the person who receives the right from the designer.

Rights to Trade Secrets, based on the IPR Guidebook (2006: 48) is information that is not known by the public in the field of technology and/or business, has economic value because it is useful in business activities, and is kept confidential by the owner of trade secrets. The scope of trade secret protection includes production methods, processing methods, sales methods, or other information in the field of technology and/or business that has economic value and is not known by the general public.

Included in the category of creations that get Copyright at least must fulfill the basic principles of Copyright, namely:

1) What is protected by copyright is an original tangible idea. One of the most
   One of the most fundamental principles of Copyright protection is the concept that Copyright deals with the form of embodiment of a work, so it does not concern or do not deal with the substance. (Edy Damian, Bandung 2002: 96-106) And from that basic principle has given birth to two sub-principles, namely:
   a. A creation must pay attention to originality in order to enjoy the rights granted by the law. Authenticity is closely related to the form of embodiment of a work.
   b. A work has Copyright if the creation concerned is realized in written form or in another material form. This means that an idea or a thought or an idea or an ideal is not yet a creation.
1) Copyright arises by itself. Namely Copyright exists at the time a creator realizes his idea in a tangible form. With the existence of a form of an idea, then a creation is born. A creation that is not announced, the copyright remains with the creator.
2) A creation does not need to be announced to obtain copyright. That is, a creation either announced or not announced both can obtain Copyright.
3) Copyright of a work is a right recognized by law (legal right) that must be separated and must be distinguished from the physical use of a work.
4) Copyright is not an absolute monopoly but only a limited monopoly.

5) This can happen because conceptually Copyright does not recognize the concept of a full monopoly, so that it is possible conceptually does not recognize the concept of a full monopoly, so it is possible for a creator to create a creation that is the same as the creation that has been created before.

In the legislation of the Indonesian government, anything related to the with the scope of Copyright has been outlined in the form of legislation. The definition of Copyright as outlined in Article 1 paragraph (1) of UUHC No. 16 of 2002; exclusive rights for creators or recipients of rights to publish or reproduce creations or give permission for it without reducing restrictions under applicable laws. Meanwhile, what is meant by exclusive rights is that which is solely reserved for the holder so that no other party may utilize the rights without the holder's permission. In the sense of announcing or reproducing, including translating, adapting, arranging, translating, selling, renting, lending, importing, exhibiting, performing to the public, broadcasting, recording, and communicating the creation to the public through any means.

Copyright is classified as a movable object that can be transferred. ownership. The way to transfer ownership is throughinheritance, grants, wills, written agreements, and other causes justified by laws and regulations. (Law no 19 of 2002, Art:2-3)

Software

Software literally means software, which is a collection of several commands executed by a computer machine in carrying out its work. In addition, software is also electronic data stored in such a way by the computer itself. This stored data can be in the form of programs or instructions that will be executed by commands, as well as records needed by the computer to carry out the commands it executes. To achieve this desire, a logic structure is designed, the logic that is compiled is processed through software, which is also called a program along with the data it processes. Processing in this software involves several things, including the operating system, program, and data. This software is arranged in such a way that the existing logic can be understood by computer machines. (Purbo W. Onno. 1998: 2)

The official definition of a computer program can be found in the WIPO "Model Provisions on the Protection of Computer Software" as follows. (Ras Ginting, Elyta. 2012: 252) Namely: "A set of instructions in words, codes, schemes or in any other form, which is capable, when coporated in a machinereadable medium, of causing a 'computer' an electronic or similar device having information processing capabilities to perform or achieve a particular task of result".

The definition given by WIPO has been fully adopted by Law Number 19 of 2002 concerning Copyright as stipulated in Article 1 number 8, as follows: "a set of instructions embodied in the form of language, code, scheme, or any other form, which when combined with a computer-readable medium will be able to make the computer work to perform specific functions or to achieve specific results, including storage in designing the instructions."

Software is an object protected by copyright law. Its very central function in operating a computer causes the need for software to increase. Software users ranging from teenagers to adults show the significant role of software in the lives of humanity, especially in modern times. The need for software causes a lot of copyright infringement committed by software users in order to find cheap and quality software of course for economic reasons by buying or using software resulting from criminal acts of copyright infringement or what is often called piracy. Various ways are done by the perpetrators of piracy to counterfeit and reproduce software. Among the modes of violation that include software piracy offenses, (Hutagalung, 2012: 325) such as:

1) Performing Hardisk Loading, this piracy occurs when a consumer buys original software then for personal use consumers usually install the software to more than one computer exceeding the license or permission allowed.
2) Counterfeiting. A type of software counterfeiting that is usually done seriously, the software Compact Disc (CD) pieces are not wrapped in ordinary plastic. Here, the pirate also makes the packaging box look like the original, complete with a manual book and convincing CD pieces.
3) In addition, piracy offenses are also often committed through the Internet/online piracy. This is a type of piracy that is done through an internet network connection. There are many websites that provide pirated software for free. Someone who needs it can download it anytime. And also in the form of Corporate End User Piracy. This type of software piracy is usually carried out by companies that have commercial activities. In practice, software that should be installed in accordance with the license provided is in fact installed on a larger number of hardware.

Network Hardware

There are many types of network devices. Although they have different functions and roles, these network devices support each other's performance. Network monitoring is required to be able to see the performance of eachnetwork. If any one device is not connected in a computer network, other devices will be disrupted and malfunction. There are several different network devices as follows.

Router

A router is a network device that serves to connect two or more networks. Routers connect networks with star, bus, and ring topologies. Thanks to two routers the network can exchange information and data. Routers are used in the TCIP/IP/IP router network protocol. In addition, a router is an access server, a device that can establish a connection that connects a LAN to telecommunications services. This router is called a DSL (Digital Subscriber Line) Router.

Figure 5.1:-

Wireless Card

This device can connect computers with other computers using Wi-Fi without using cables. Nowadays, many laptops have a wireless card built into them, so there is no need to buy a wireless card separately. Unlike laptops, computer users must purchase a wireless card separately to connect to Wi-Fi.

Figure 5.2:-

LAN Card / NIC

LAN cards can also connect one computer to another computer. The difference is that LAN cards must connect computers using cables. The LAN card will change the data flow from parallel to serial form, then the data will be sent via UTP cable.Network Interface Card (NIC) is a card that can connect a computer to a LAN network. The device can connect to the network using a cable.

Figure 5.3:-

Bridge

This device can expand the network so that it can be used by other devices in a wide range. The bridge functions to forward data, dividing the network into several networks. This makes the network coverage wide. The bridge has an internal Bridge table that serves to determine which segments should be filtered.

Figure 5.4:-

HUB

The function of the HUB is to share the server to other networks. The HUB will copy data from the source connected to the port on the HUB. If in a building there are 10 computers connected to the HUB and have one data source computer, the HUB will share the data with the connected devices. However, if the HUB experiences transmission interruptions to other networks, it will be hindered.

Figure 5.5:-

Switch

The way this device works is almost similar to the HUB, but the switch is smarter in dividing the connection signal. Using a switch, the network area can be better and faster to send data. This device can also resolve data collisions.

Figure 5.6:-

Access Point

The function of this device is to transmit signals from the router. The signal is used to create a WLAN network. Access Point can also make us connect to a LAN network without using a cable. Then from the access point it can be said that it can connect two different networks, namely a wireless network and a LAN network.

Figure 5.7:-

Repeaters
Repeaters are network devices that can amplify signals and expand the range of wifi signals. Repeaters allow devices to access wifi easily. Repeaters do not need to use cables to minimize cable usage.

Figure 5.8:-

Networking
A network is a collection of two or more connected computer systems. There are many types of computer networks:

Local Area Network (LAN)
Connected computers are located in a geographically close place (for example, one building).

Metropolitan Area Network (MAN)
A Metropolitan Area Network (MAN) is basically a larger version of a LAN and usually uses the same technology as a LAN. MANs can cover adjacent company offices or even a city and can be used for private or public purposes. MANs are capable of supporting data and voice, and can even connect to cable television networks.

Wide Area Network (WAN)
Wide Area Network (WAN), its reach covers a wide geographical area, often covering a country or even a continent. WANs consist of a collection of machines whose purpose is to run user programs (applications).

Internet
There are many networks in the world, often using different hardware and software. People connected to a network often wish to communicate with other people connected to other networks. Such a wish requires links between networks that are often incompatible and different. Usually to do this, a machine called a gateway is needed to make the connection and carry out the necessary translations, both hardware and software. This collection of interconnected networks is called the internet.

Cordless Networks
A wireless network is a solution to communication that cannot be done with a network that uses cables. For example, people who want to get information or communicate even though they are on a car or airplane, then

absolutely a wireless network is needed because a cable connection is not possible in a car or plane. Currently, wireless networks are widely used by utilizing satellite services and are able to provide faster access speeds compared to networks that use cables. which are far apart and connected by telephone lines or radio waves.

In addition, computer networks can also be grouped based on the following criteria:

Topology
The arrangement of connections between computer systems. There are various topologies such as bus, star, and ring.

Protocol
A protocol defines a group of rules and signals used by computers on a network to communicate. The most popular LAN protocol is Ethernet. Another widely used LAN protocol is the IBM token-ring network.

Architecture
Network architecture can be classified into peer-to-peer or client/server architecture.

Topology
Topologies are various ways of connecting computer networks on a certain scale for a purpose. There are many LAN Topologies, including Bus Topology, Ring Topology, Star Topology, Mesh Topology, Extended Star Topology, etc.

Each topology has different characteristics and each also has advantages and disadvantages. Topology does not depend on the media and each topology usually uses the following media:
1. Twisted pair
2. Coaxial cable
3. Optical cable, or
4. Wireless.

The following is a little explanation of the various network topologies.
Bus or Daisy Chain Topology
This topology has the following characteristics:
1. is one cable that both ends are closed, where along the cable there are nodes
2. commonly used because it is simple in installation
3. signal passes through the cable in two directions and there may be a collision
4. The biggest problem is when the cable breaks. If one segment of the cable breaks, the entire network will come to a halt.

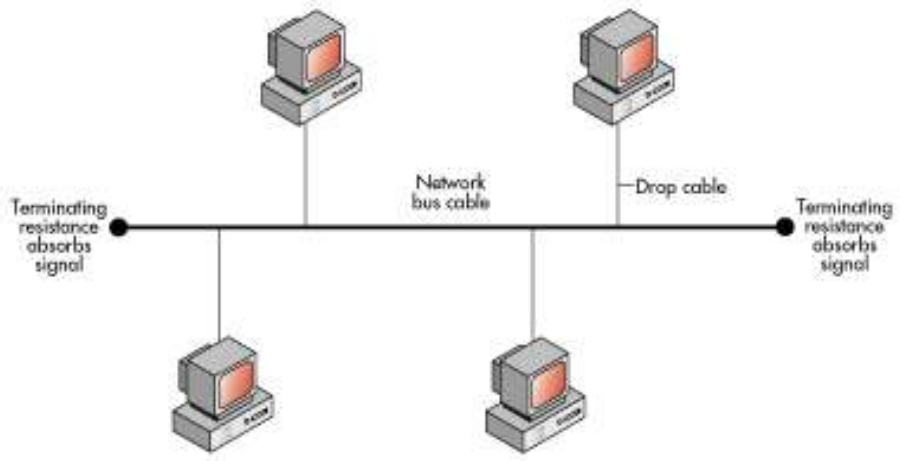

Figure 5.9:- Bus Topology.

Ring Topology
This topology has the following characteristics:
1. a closed circle containing nodes

2. simple in layout
3. signals flow in one direction, so as to avoid collision (two data packets mixed), thus allowing fast data movement and simpler collision detection.
4. Problem: similar to bus topology
5. usually the ring topology is not physically created but realized with a concentrator and looks like a star topology

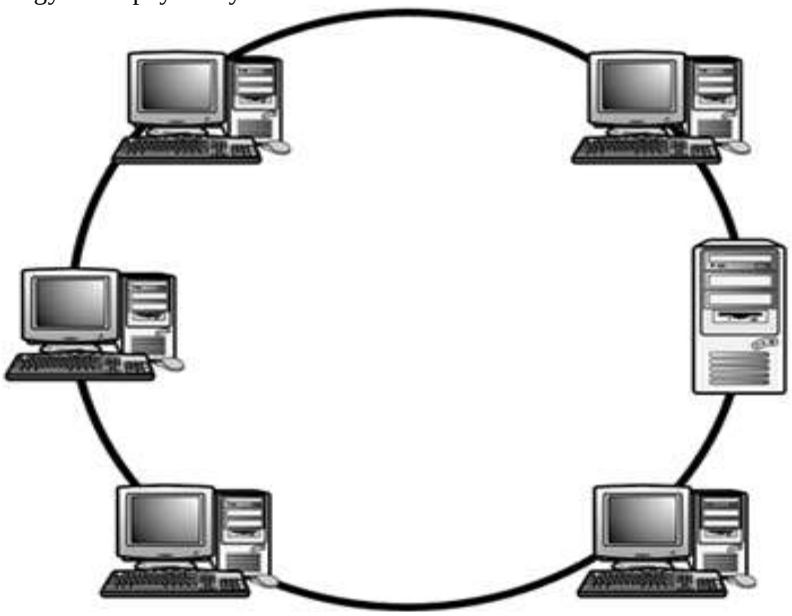

Figure 5:- 10. RingTopologi.

Star topology

This topology has the following characteristics:

1. each node communicates directly with the central node, data traffic flows from the node to the central node and back again.
2. easy to develop, because each node only has a cable that is directly connected to the central node
3. advantages: if one node cable is disconnected the others are not disturbed, a "lower grade" cable can be used because it only handles one traffic node, usually UTP cable is used.

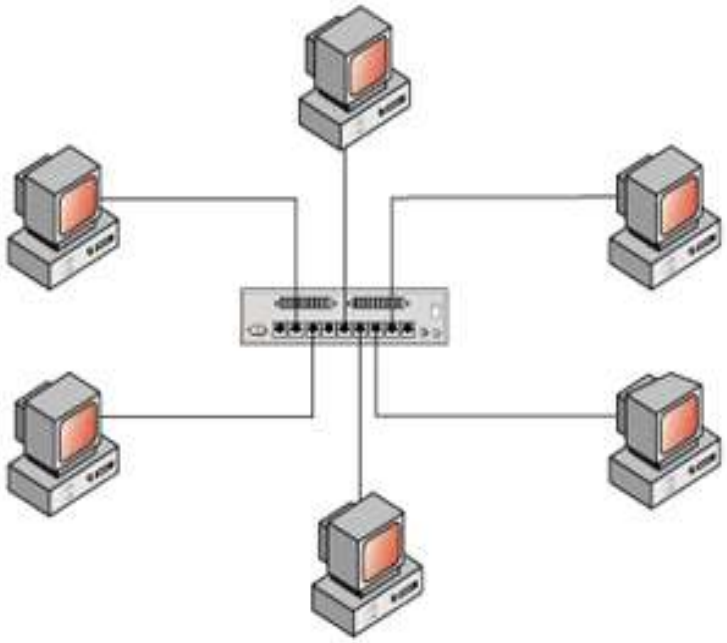

Figure 5:- 11. StarTopologi.

Mesh Topology

MESH topology is built by installing links between stations. A 'fully-connected mesh' is a network where each terminal is directly connected to all other terminals. It is usually used in small computer networks. This topology is theoretically possible but impractical and costly to implement. Mesh topology has a high level of redundancy. So that if there is one broken link then a station can find another link.

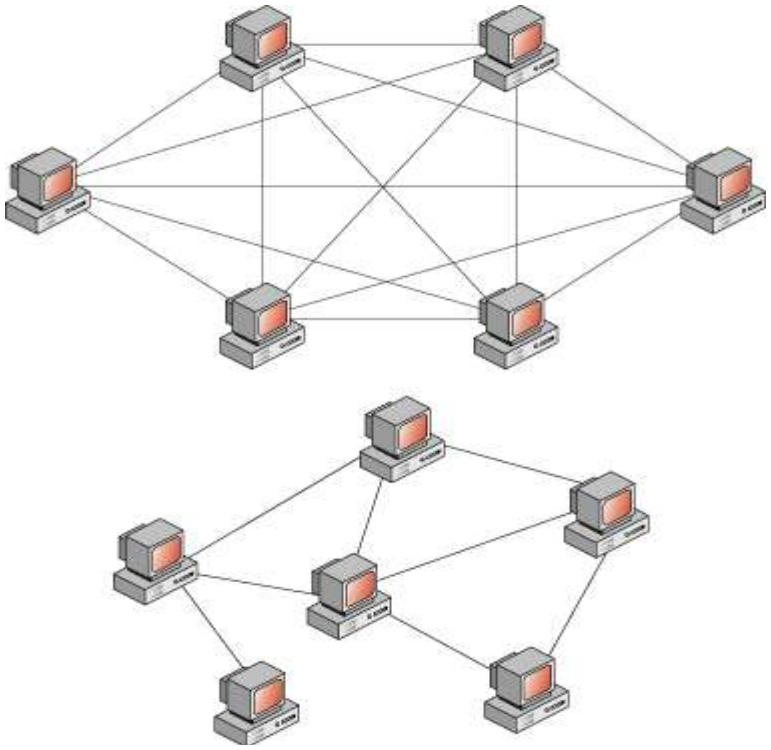

Figure 5:- 12. Topologi Mesh.

TREE topology

Tree topology is built by bus networks that are connected together. Example: every building on a campus has a Bus Network that has been installed, so each network can be connected together to form a technology tree that can cover all campuses. Because the tree topology consists of topology buses connected together, the tree topology has the same characteristics as the topology bus.

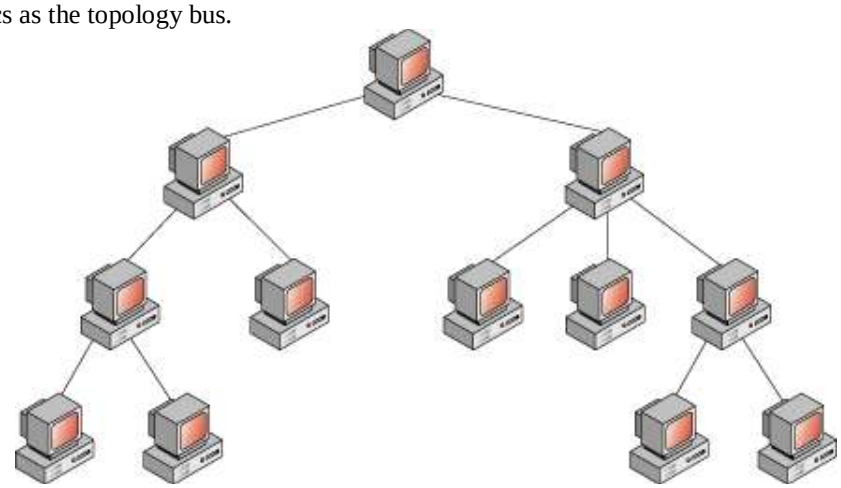

Figure 5:- 13. TopologiTree.

Wiring Type

There are several types of wiring that are commonly used and can be used to apply networks, namely:

Thin Ethernet (Thinnet)
Thin Ethernet or Thinnet has advantages in terms of relatively cheaper costs compared to other types of wiring, and easier installation of components. The length of the thin coaxial/RG-58 cable is between 0.5 - 185 m and a maximum of 30 computers are connected.

Thick Ethernet (Thicknet)
With thick Ethernet or thicknet, the number of computers that can be connected in the network will be more and the distance between computers can be enlarged, but the cost of procuring this wiring is more expensive and installation is relatively more difficult than Thinnet. In Thicknet, a transceiver is used to connect each computer to the network system and the connector used is a DIX type connector. The maximum transceiver cable length is 50 m, the maximum Thick Ethernet cable length is 500 m with a maximum of 100 transceivers connected.

Twisted Pair Ethernet
Twisted Pair cable is divided into two types, namely shielded and unshielded. Shielded is a type of cable that has a wrapping sheath while unshielded does not have a wrapping sheath. For this type of cable connection using RJ-11 or RJ-45 connectors. In a twisted pair (10 BaseT) network, computers are arranged in a star pattern. Each PC has one twisted pair cable that is centralized on the HUB. Twisted pair is generally more reliable than thin coax because the HUB has data error correction capabilities and increases transmission speed.There are currently several grades, or categories of twisted pair cables. Category 5 is the most reliable and has high compatibility, and is the most recommended. It runs well at 10Mbps and Fast Ethernet (100Mbps). Category 5 cables can be straight-through or crossed. A straight through cable is used to connect the computer to the HUB. Crossed cables are used to connect HUB to HUB and Broadband Modem directly to PC (without HUB). The maximum cable length of Twisted-Pair cable is 100 m.

Fiber Optic
Networks that use Fiber Optic (FO) are usually large companies, because the price and installation process is more difficult. However, networks that use FO in terms of reliability and speed are not in doubt. Data transmission speed with FO media is more than 100Mbps and is free of environmental influences.

TCP/IP protocol
The role of the Windows operating system and also because the TCP / IP protocol is the default protocol of Windows. The TCP protocol is at the Transport layer of the OSI (Open System Interconnection) model, while IP is at the Network layer of the OSI mode.

IP Address
IP addresses are addresses assigned to computer networks and network equipment that use the TCP/IP protocol. The IP address consists of 32 bits of binary numbers that can be written as four groups of decimal numbers separated by periods such as 192.168.0.1.

Network ID Host ID
The IP address consists of two parts, namely network ID and host ID, where the network ID determines the network address of the computer, while the host ID determines the host address (computer, router, switch). Therefore, the IP address provides the complete address of a host along with the network address where the host is located.

IP Address Classes
To simplify usage, depending on the needs of the user, IP addresses are divided into three classes as follows:

Class Network ID Host ID Default Subnet Mask
A xxx.0.0.1 to xxx.255.255.254 - Default subnet mask: 255.0.0.0
B xxx.xxx.0.1 to xxx.xxx.255.254 - Default subnet mask: 255.255.0.0
C xxx.xxx.xxx.1 to xxx.xxx.xxx.254 - Defaul subnet mask : 255.255.255.0

Class A IP addresses are assigned to networks with a very large number of hosts. IP range 1.xxx.xxx.xxx. - 126.xxx.xxx.xxx, there are 16,777,214 (16 million) IP addresses in each class A. Class A IP addresses are assigned to networks with a very large number of hosts. In a class A IP address, the network ID is the first 8 bits, while the host ID is the next 24 bits.

Thus, the way to read a class A IP address, for example 113.46.5.6 is:

Network ID = 113
Host ID = 46.5.6

So the IP address above means host number 46.5.6 on network number 113.
Class B IP addresses are usually allocated for medium and large networks. In a class B IP address, the network ID is the first 16 bits, while the host ID is the next 16 bits.

Thus, how to read a class B IP address, for example 132.92.121.1

Network ID = 132.92
Host ID = 121.1

So the IP address above means host number 121.1 on network number 132.92. with a host ID length of 16 bits, a network with a class B IP address can accommodate around 65000 hosts. IP range 128.0.xxx.xxx - 191.255.xxx.xxx

IP address class C was originally used for small networks (LANs). Host ID is the last 8 bits. With this configuration, about 2 million networks can be formed with each network having 256 IP addresses. IP range 192.0.0.xxx - 223.255.255.x.

Domain Name System (DNS)
Domain Name System (DNS) is a system that allows the name of a host on a computer network or the internet to be translated into an IP address. In naming, DNS uses a hierarchical architecture.

1) Root-level domain: is the top level displayed as a dot (.).
2) Top-level domain: organization or country category code eg: .com for use by companies; .edu for use by universities; .gov for use by government agencies. In addition, to distinguish the use of names by a country from other countries, signs are used such as .id for Indonesia or .au for Australia.
3) Second level domain: is a name for organizations or companies, for example: microsoft.com; yahoo.com, and others.

a. DHCP (Dynamic Host Configuration Protocol)

IP addresses and subnet masks can be assigned automatically using the Dynamic Host Configuration Protocol or filled in manually. DHCP functions to automatically assign IP addresses to computers that use the TCP/IP protocol. DHCP works in a client-server relationship, where the DHCP server provides a group of IP addresses that can be assigned to DHCP clients. In providing this IP address, DHCP only lends the IP address. So the provision of this IP address takes place dynamically.

Conclusion:-

As a result of this Community Service activity, we can conclude the following:

1. Teachers and Students of SDN 2 Puosu and SDN 1 SendangMulyasari in Konawe and East Kolaka Regencies have good enthusiasm for the material presented, after this activity it is hoped that they can find out the Law on IPR / Pirated Patents and are skilled in using the Use of Applications and using the Regional Language Digital Dictionary Application and can develop themselves from the material taught.
2. In general, the teachers and students of SDN 2 Puosu and SDN 1 SendangMulyasari in Konawe and East Kolaka Regencies positively welcomed the service materials, and they saw the need for closer cooperation in other subsequent activities.
3. Dialogue, questions, opinions, and opinions from participants can make a spur for Lecturers of the Faculty of Law, Faculty of Arts and Lecturers of the Faculty of Engineering at Haluoleo University to further develop and contribute more to Teachers, Students and the wider community.
4. In general, service activities can be said to be successful, despite the short time and limited time.

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