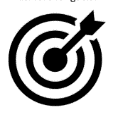
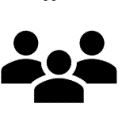
**LSPU Self-paced Learning Module (SLM)**

| **Course** | **Bachelor of Science in Information Technology** |
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| **Sem/AY** | **First Semester/2023-2024** |
| **Module No.** | **1** |
| **Lesson Title** | **INTRODUCTION TO CLIENT SERVER** |
| **Week Duration** | **1** |
| **Date** |  |
| **Description of the Lesson** | This course covers the theoretical foundations and practical applications of client-server systems, a popular type of distributed system in which software is divided into server and client duties. Client-server application development for database systems is covered in-depth in this course. With a focus on middleware, systems planning, and data access, both central and distributed server models will be examined. |



**Learning Outcomes**

| **Intended Learning Outcomes** | The following targeted learning outcomes should be accomplished by students:   * Recognize the significance of client-server architecture while creating websites. * Showcase the client-server system's elements. * Determine the client host that is appropriate and required for our website. |
| --- | --- |
| **Targets/ Objectives** | At the end of the lesson, students should be able to:   * Recognize the function of client servers and their significance in website development. * To recognize the various client-server components. * To comprehend client-server architecture. |



**Student Learning Strategies**

| **Online Activities (Synchronous/**  **Asynchronous)** | 1. **Online Discussion via Google Meet**   You will be required to attend a two-hour lecture on the nature of educational technologies and a three-hour lab on those same topics. Please click on the following link to access the online discussion:  The online discussion will take place between 8:00 and 10:00AM on September 26 and 30, 2022.  (For further instructions, refer to your Google Classroom and see the schedule of activities for this module)   1. **Learning Guide Questions:** 2. What non-projected materials are available for use in the teaching and learning process? 3. What are the benefits and drawbacks of using these non-projected materials? 4. How these non-projected materials can enhance the effectiveness of teaching process?   ***Note:*** *The insight that you will post on online discussion forum using Learning Management System (LMS) will receive additional scores in class participation.* |
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| **Offline Activities**  **(e-Learning/Self-Paced)** | **Lecture Guide**  **Introduction to Client-Server**  **What is Client-Server?**  **Client**   * Requests that a server deliver information or a service. * Often regarded as the user or program making the request in client-server architecture. * Open channels of communication with the servers, who are waiting for requests to come in.   **Sever**   * A sample of hardware or software that provides customers with a particular service. * Runs a server application or programs, which makes resources available to clients. * A computer program or piece of hardware that processes requests sent via the internet.   **Client-Server Network**   * Created for end users, sometimes known as clients, to access resources from a central computer known as a server, such as files, songs, video collections, or some other service. * Serving clients is the sole function of a server, as suggested by its name! * In order to use a service provided by a server, the client must make a request to software. * The server runs one or more applications that share resources with and distribute tasks across clients. * In a client-server relationship, the user and the server have a two-way communication channel that must follow a standard communications protocol. * The TCP/IP protocol suite is commonly used for client-server communication.   **TCP (Transmission Control Protocol)**   * Keeps the connection open until the client and server have finished exchanging messages. * Decides how to distribute application data into packets that networks can transport, sends and receives packets over the network, and controls flow control and packet retransmission for lost or jumbled packets.   **IP (Internet Protocol)**   * A connectionless protocol in which each packet of data going across the internet is a separate data unit unrelated to any other data units. * Performs the responsibility of locating the address where the data is to be delivered.   **Client Host and Server Host**   * The meanings of client-host and server-host are slightly different from those of client and server. Any computer linked to a network is a host. Server-host and user-host always relate to computers, whereas server and client might be either a computer or a computer application. Clients and servers are only applications that operate on the host, which is a flexible, multifunctional machine.   **Centralized Computing**   * Focuses on giving a select few computers a large amount of resources. * Using terminals connected to a main computer for computing at a central location. * Provides more security than decentralized systems due to the central control of all processing. * Substantially depends on the level of administration and resources made available to its users. * From the 1980s to the late 1990s, microcomputers became more affordable and powerful, and many businesses switched their computing operations from centralized servers like mainframes and minicomputers to fat clients.   **Characteristics of Client Computing**    **The following are the key aspects of client-server computing:**   1. The client server computing works with a system of request and response. The client sends a request to the server and the server responds with the desired information. 2. The client and server should follow a common communication protocol so they can easily interact with each other. All the communication protocols are available at the application layer. 3. A server can only accommodate a limited number of client requests at a time. So it uses a system based to priority to respond to the requests. 4. Denial of Service attacks hinders a server’s ability to respond to authentic client requests by inundating it with false requests. 5. An example of a client server computing system is a web server. It returns the web pages to the clients that requested them.   **Client-Server Architecture**   * A computing model where the majority of the resources and services that the client will use are hosted, delivered, and managed by the server. * Has a network or internet connection that connects one or more client computers to a central server. * Known as a networking computing model or client-server network because all the requests and services are delivered over a network. * It is considered a form of distributed computing system because the components are doing their work independently of one another.   **Example**  F:\Users\LENOVO\Desktop\ClientServerArchitecture1.png  **Characteristics of Client-Server Architecture**  **The following are the key aspects of client-server architecture:**   1. Client and server machines need different amount of hardware and software resources. 2. Client and server machines may belong to different vendors. 3. Horizontal scalability (increase of the client machines) and vertical scalability (migration to a more powerful server or to a multi-server solution). 4. A client or server application interacts directly with a transport layer protocol to establish communication and to send or receive information.   **Engaging Activities**  **Actual Activities of the Students**  Create an illustration of a Central Computing. |

| **NAME:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **YR/SEC:** \_\_\_\_\_\_\_\_\_\_\_  **DATE OF SUBMISSION:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **SCORE:** \_\_\_\_\_\_\_\_\_\_\_   1. **Fill in the blanks: Write your answer in the space provided.**   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. It is designed for end-user.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2. It is also known as network computing.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_3. It maintains a connection until the client and server have completed the message exchange.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_4. It is a connectionless protocol in which each packet traveling through the Internet is an independent unit of data unrelated to any other data units.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_5. In what years those [microcomputers](https://en.wikipedia.org/wiki/Microcomputer) decreased in price and increased in power.   1. **Essay: Write your answer in the space provided. (5points)** 2. **What is the difference between Client and Server?**   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. **What is Centralized Computing?**   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
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**Performance Tasks** 



**Understanding Directed Assess**

***Rubric for Designing Lesson Plan (PT 2)***

| **CRITERIA** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | **4** | **3** | **2** | **1** | **Points** |
| **Content** | All information provided by the student on the web site is accurate and all the requirements of the assignment have been met. In other words, there is sufficient content in this website to learn about the topic and complete a research assignment. | Almost all the information provided by the student on the web site is accurate and all requirements of the assignment have been met. Or all the information is accurate but not all of the requirements of the assignment were met. Information is not complete. | Almost all of the information provided by the student on the web site is accurate and almost all of the requirements have been met. If there is little information on the website, then it is satisfactory. If researchers cannot find what they need on your website, it is satisfactory. | There are several inaccuracies in the content provided by the students OR many of the requirements were not met. Not enough content, very incomplete. |  |
| **Learning of Material** | The student has an exceptional understanding of the material included in the site and where to find additional information. Can easily answer questions about the content and procedures used to make the web site. | The information on the website is well understood by the student. may clearly respond to inquiries about the techniques and content utilized to create the website. | The student has a fair understanding of the material included in the site. Can easily answer most questions about the content and procedures used to make the web site. | Student did not appear to learn much from this project. Cannot answer most questions about the content and the procedures used to make the web site. |  |
| **Links (content)** | All links point to high quality, up-to-date, credible sites in the bibliography. AND all the links, including links to their own pages, work. | Almost all of the links in the bibliography lead to reliable, high-quality websites. if the number of links is minimal. AND most, if not all, of the connections, including those to their own pages, are functional. | Most links point to high quality, up-to-date, credible sites in the bibliography. Or there are too few links. AND some of the links, including links to their own pages, work. | Less than 1/2 of the links point to high quality, up-to-date, credible sites in the bibliography. Or there are barely any links. AND few of the links, including links to their own pages, work or you have very few pages. |  |
| **Graphics** | Graphics are related to the theme/purpose of the site, are thoughtfully cropped, are of high quality and enhance reader interest or understanding. There are no broken images. | Graphics are related to the theme/purpose of the site, are of good quality and enhance reader interest or understanding. There are no broken images. | Graphics are related to the theme/purpose of the site, and are of good quality. There may be a few broken images. | Graphics seem randomly chosen, are of low quality, OR distract the reader. Many images are broken. |  |
| **Layout and composition** | The web site has an exceptionally attractive and usable layout. It is easy to locate all important elements. White space, graphic elements and/or alignment are used effectively to organize material. | The web pages have an attractive and usable layout. It is easy to locate all important elements. | The web pages have a usable layout, but may appear busy or boring. It is easy to locate most of the important elements. | The web pages are cluttered looking or confusing. It is often difficult to locate important elements. |  |
| **Navigation** | Links for navigation are clearly labelled, consistently placed, allow the reader to easily move from a page to related pages (forward and back), and take the reader where s/he expects to go. A user does not become lost. | Links for navigation are clearly labelled, allow the reader to easily move from a page to related pages (forward and back), and internal links take the reader where s/he expects to go. A user rarely becomes lost. | Links for navigation take the reader where s/he expects to go, but some needed links seem to be missing. A user sometimes gets lost. | Some links do not take the reader to the sites described. A user typically feels lost. |  |
| **Cooperative Work** | Partners show respect for one another's ideas, divide the work fairly, and show a commitment to quality work and support for each other. | Partners show respect for one another's ideas and divide the work fairly. There is commitment by some members toward quality work and support of one another. There may have been a few arguments but they were handled well. | Partners show respect for one another's ideas and divide the work fairly. There is little evidence of a commitment toward quality work in the group or there were some arguments. | Partners argue or are disrespectful of other's ideas and input. Criticism is not constructive nor is support offered. The work is mostly done by one or two people. |  |
| **Total---------->** | | | | |  |



**Learning Resources**

| Website:   * [www.tutorialspoint.com](http://www.tutorialspoint.com) * [www.wikipedia.org](http://www.w3schools.com) * [www.geeksforgeeks.org](http://www.geeksforgeeks.org) |
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