|  |  |  |  |
| --- | --- | --- | --- |
| animatedLOGO | **Assignment No. 02 (Graded) Spring 2024 CS610P- Computer Networks(Practical)** | | **Total Marks: 10**  **Due Date: June 23, 2024** |
| ***Instructions:***  **Please read the following instructions carefully before solving & submitting the assignment solution:**  **It should be clear that your assignment will not get any credit (zero marks) if:**   * **The assignment is submitted after the due date.** * **The submitted assignment solution does NOT open or the file is corrupt.** * **The assignment is copied (from other students or copied from handouts or the internet).** * **Please ensure that your assignment submission is in the proper file format (i.e. MS Word file in DOC or DOCX file format). Solution submitted in any irrelevant file format such as scanned images, PDFs, .zip, .rar, .bmp, etc., will not be accepted.**   ***Objectives:***  The objectives of this assignment are:   * To design and structure subnetworks within a Class **C** network. * To calculate and assign IP addresses using subnet masking techniques.   **For any query about the assignment, contact at** [**cs610p@vu.edu.pk**](mailto:cs610p@vu.edu.pk)  **GOOD LUCK** | | | |
|  | | **Marks: 10** | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Assignment No. 2 (Marks 10)**  **SCENARIO:**  You are the network administrator for a mid-sized company called "TechSolutions Inc." The company has recently expanded and acquired two new office locations. Each location needs to be set up with its own subnet to ensure efficient network traffic route management.  **Current Network Setup:**   * The main office has been assigned the IP address range 192.168.1.0/24 (Class C network). * The two new offices (Office A and Office B) each need their own subnet, and each office is expected to support up to 50 devices.   **Requirements:**   * Create a subnet for Office A. * Create a subnet for Office B. * Ensure that the subnets can each support up to 50 devices. * Calculate the subnet mask for each subnet. * Determine the range of IP addresses available in each subnet. * Identify the network address and broadcast address for each subnet.   **Considering the requirements mentioned above for the given scenario, answer the following Questions:**  Q#1: What minimum bits are required for the host portion to support up to 50 devices? You are required to compute the subnet mask which is used to ensure that each subnet can support up to 50 devices. You need to follow the table below for answering question:   |  |  | | --- | --- | | **Number of bits needed for Host ID** |  | | **New subnet mask for each subnetwork** |  |   Q#2: Calculate the subnets for Office A and Office B, including their network addresses, broadcast addresses, and the range of available/useable IP addresses. Provide your answer in the table below:   |  |  |  | | --- | --- | --- | |  | **Office A** | **Office B** | | **Network Address:** |  |  | | **Broadcast Address:** |  |  | | **Usable IP Range:** |  |  | | **Broadcast Address:** |  |  |   **Note:** You must submit your solution as an *MS Word document (DOC or DOCX)* file. |
| **Lectures Covered:** This assignment covers Lab # 7 to 11.  **Deadline:** Your assignment must be uploaded/submitted on or before the due date (**June 23rd, 2024)**. |