

Computer Networks Lab Assignment 2

Date: 29-08-2025

1. Objective

To understand and implement the functionality of **Application Layer protocols** — **HTTP, SMTP, FTP, DNS, and LDAP** — using Python programming.

2. Tasks

A. HTTP

- Write a Python program to:
 1. Send GET and POST requests to a test API or website.
 2. Display the response status code, headers, and body.
 3. Log errors if the request fails.

B. SMTP

- Write a Python program to:
 1. Connect to an SMTP server.
 2. Send a test email to a recipient address.
 3. Log the communication process for reference.

C. FTP

- Write a Python program to:
 1. Connect to an FTP server.
 2. Upload a file and confirm the upload.
 3. Download a file from the server and verify its content.
 4. List directory contents on the server.

D. DNS

- Write a Python program to:
 1. Resolve the IP address of a given domain name.
 2. Retrieve different DNS records such as A, MX, and CNAME.
 3. Log query results into a text file.

3. Deliverables

- Python scripts for each protocol implementation.
 - Output screenshots demonstrating successful execution.
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