CSL4030 Data Engineering
Lab - 9 Assignment
October 11th, 2023

Note: Refrain from using pre-written code or solutions from the internet, including AI language models (like LLMs), to compose your queries. Ensure your submissions are your work, and avoid copying or sharing code with your classmates. The evaluation process will include a plagiarism check.

Note: For this assignment, OpenLDAP, Microsoft Active Directory, or any LDAP-compliment server these technologies you can use.

Write all the queries in a Word/PDF file and the output screen. Late submissions are allowed. However, your obtained marks will be reduced by half as a penalty.

Question 1: Answer the following:

a) What is LDAP, and what is its primary purpose in the context of computer networks and directory services?
b) Explain the key components of an LDAP directory entry. Provide examples of attributes commonly found in LDAP entries.
c) Describe the LDAP directory tree structure and its significance in organizing directory information. Use a simple diagram to illustrate a directory tree.
d) In the context of LDAP, what is LDIF (LDAP Data Interchange Format), and how is it used for data import/export operations? Provide a sample LDIF entry for adding a user to an LDAP directory.

Question 2: Answer the following: LDAP User Account Creation

a) You need to create a new user account in an LDAP directory for a user named "Alice." The user should belong to the "ou=users,dc=example,dc=com" organizational unit (OU). Explain the steps and LDAP commands you would use to accomplish this task.

b) LDAP Group Membership
You are tasked with adding a user named "Bob" to an LDAP group named "developers." The group "developers" is located under the "ou=groups,dc=example,dc=com" OU. Provide a step-by-step guide on how to add the user "Bob" to the "developers" group.