**Project**: Geographic Information System Laboratory – Geomatics Department, University of Uyo, Nigeria

**Task**: To set up a GIS laboratory with 40 workstations and a central server; part of the University’s preparation for the accreditation of the GIS Department of the University by the National University Commission (NUC).

**Project Objective**: The lab to be used for practical demonstration of courses by the teaching faculties and for the students to use for personal practical.

**Network design architecture:**

1. **Core Layer**: This layer consists of the central server, which is responsible for managing the network and providing services to the other layers. The server should be connected to a high-speed switch to ensure fast data transfer between the server and other devices.
2. **Distribution Layer**: This layer consists of switches that connect the core layer to the access layer. The switches should be configured to provide redundancy and load balancing to ensure high availability and performance.
3. **Access Layer**: This layer consists of the 40 workstations that are used by students. Each workstation should be connected to a switch that is connected to the distribution layer. The switches should be configured to provide Quality of Service (QoS) to ensure that the lecturer’s computer has priority over other workstations when monitoring student assignments.
4. **Wireless Layer**: This layer consists of wireless access points that provide wireless connectivity to the workstations. The access points should be connected to the distribution layer and should be configured to provide secure and reliable wireless connectivity.

**Network Design Architecture Diagram**

See attached file in the repository.