

## ASSIGNMENT #2

NES 470, Fall 2023, Dr. Ahmad T. Al-Hammouri

**Due date: Thursday 23/11/2023 at 11:55pm.**

### Objectives:

To acquire a hands-on experience with the SMIV2 data modeling language to write a MIB module.

### Problem Statement:

In this assignment, you are required to use the SNMP SMIV2 modeling language to write a SNMP MIB module that gives the ability to manage (i.e., query) a Webserver's **access log records** of all requests processed by the server.

The following lines give an example of the contents of the access log file

```
55.55.55.55 1692960911 GET /pics/5star2000.gif HTTP/1.1 304 0 "Mozilla/5.0 (Windows NT 10.0; Win64; x64) "
12.11.15.90 1692960914 GET /asctortf/ HTTP/1.1 200 942 "Mozilla/5.0 (Windows NT; Windows NT 10.0; en-US) "
55.55.55.55 1692960915 POST /search HTTP/1.1 400 612 "Mozilla/5.0 (Windows NT; Windows NT 10.0; en-US) "
73.35.93.19 1692960915 GET / HTTP/1.1 200 396 "Mozilla/5.0 (Windows NT 10.0; Win64; x64) "
81.73.14.23 1692960919 GET /pics/wpaper.gif HTTP/1.0 200 6248 "Mozilla/4.05 (Macintosh; I; PPC) "
28.56.28.75 1692960920 POST /search HTTP/1.0 200 1563 "Mozilla/4.05 (Macintosh; I; PPC) "
82.62.37.64 1692960922 POST /cgi-bin/newcount HTTP/1.0 201 100 "Mozilla/4.05 (Macintosh; I; PPC) "
```

where each record consists of the following fields

- The IP address of the client,
- The timestamp of the request (represented in Epoch Unix time),
- The HTTP method,
- The resource/file requested,
- The HTTP version,
- Status code of the response,
- The number of bytes transferred to the client, and
- The client's user agent.

Now, the MIB module requirements are as follows:

- The module name is ID-xxxxxxx, where 'xxxxxxx' is your student ID.
- All the managed objects descend (directly or indirectly) from node **nes470(9000)** under the enterprises node.
- The SNMP manager can **retrieve** any field of each record.
- Each managed object must have the **appropriate** access permissions and the **appropriate** data type.
- The module must conform to the **SMIV2** RFC (RFC 2578).
- When validated by the smilint tool with **severity level 4**, i.e., via the options `smilint -l 4 -i group`, the module must produce **no** errors and **no** warnings.

### Hints:

- You are highly encouraged to start with, and build upon the *skeletal MIB module* presented in Section 5.7 in the RFC 2578 document (<https://tools.ietf.org/html/rfc2578>).
- You are highly encouraged to look into, to investigate, and to mimic the IETF's interfaces MIB module or other actual standard MIB modules.

### Grading Policy:

- You must turn in only **working code**. If your code gives run-time errors, you will receive **zero** credit.
- Partial credit is given only for working code that does not implement all the requirements above.

### Deliverables:

- **Name the MIB module file** as follows ID-xxxxxxx, where 'xxxxxxx' is your students ID.
- Submit **ONLY** the MIB file to the elearning via the provided link. Do **NOT** send it via e-mail or a message from within the elearning even before the deadline because it will be deleted tacitly.
- **ONLY one student** from each group must submit the file.