Group 4 - SDN-based Traffic Prioritization

Scenario: Consider a network wherein computing nodes (either clients or servers) are connected through an SDN-based network. Applications running on computing nodes can either generate flows of Best-Effort class or of Priority class. The network manages flows as described in the scenario "A. Traffic Prioritization" of paper [1].

The system should:

- allow an user to register/deregister a new flow, specifying its class and possibly its parameters (e.g., bandwidth);
- allow an user to select the switch (or switches) that will implement the prioritization;
- allow an user to query each switch for the #packets handled for each class.

Detailed objectives:

1) Implement a Floodlight module that
   - implement the Traffic Prioritization behavior;
   - exposes a RESTful interface that allows an user to configure and query the module.

2) Test the overall system using Mininet, devising proper scenarios to demonstrate the above functionalities.

[1] H. Krishna, N. L. M. van Adrichem and F. A. Kuipers, "Providing bandwidth guarantees with OpenFlow," 2016 Symposium on Communications and Vehicular Technologies (SCVT), 2016, pp. 1-6, doi: 10.1109/SCVT.2016.7797664.