National University of Computer and Emerging Sciences, Karachi

**FAST School of Computing**

**CS3001-Computer Networks, Spring 2023**

1. **Project title:** Smart Road Traffic Control System (Simulation based).
2. **Group numbers name and ID:** Fabiha Atique (20k-0369) and Muhammad Usama (20k-0190)
3. **Proposed project description:**

The project is about integration of smart traffic control system for the types of collisions, congestions and traffic rules. Due to an increase in the urbanization, it has become really important to develop an efficient way for traffic control system. Traffic congestion on road occurs when the queuing increases due to traffic flow exceeding the road capacity. Our knowledge of congestion controlling (from this course) will help us.

1. **Plan of work:**
2. Problem identification: in the first step we define and d the problem, that why is there a need to create a smart traffic management system. What are the ways in which we can implement the system.
3. Conduct a research: Both the group members will research on other traffic control systems, the tools and technologies used in them.
4. Identify the requirements: At this point we will explore what features and functionalities will our system need in order to solve the problem. Such as:

* Real time traffic monitoring.
* Data processing and analysis (on the basis of monitored data)
* Develop infrastructure of our system to give optimal results.
* Responsive, the system must be able to detect accidents and deadlocks beforehand.
* Predict traffic based on previous data.
* Emergency vehicle priority. Such as giving priority to ambulances
* Data storage, the data will be stored so that it can be used for future. A database will be needed.

Note: At this point, we plan to divide the functionalities equally between both the group members. However there may be some variations depending on the tasks and their difficulty level.

4 Design the architecture, User interface and database.

1. **References:**

* <https://www.intel.com/content/www/us/en/transportation/smart-road-infrastructure.html>
* <https://www.researchgate.net/publication/305674408_Smart_traffic_light_control_system>
* <https://www.digi.com/blog/post/smart-traffic-management-optimizing-spend>