Smart traffic Signal optimi zation torent in of Dota collection and modulingly To collect real time traffic date from sensors at various intersection, we can define the following data studies. Attention Piogram! Public class Traffic data & granite wrote attendant Att tought all stab po of barrens intersection id; Private horaliste Pine timestamp; Private int vehicle count; Private dable overage speedinings it notes! 10 it um Privatetobint for queun length; it splane the mit up to uti travator sour Privatest interpred strain crossing; This data structure captures the key information we need to analyte time thatthe Conditions including vehicle counts average Speeds. queu lengths and pedertain Crossings. The intersection and timestamp fields will help us associate the data with specific locations and time periods. This class will the responsive to gothoring you Algorithm design! data than the source and storage it in traffic 10 optimize traffic Signals timings Based on the collected lata we can develop the following algorithm without without Algorathmin Traditions & grad applying action. It is supported and open Inpul Traffic aute for all interest interest interest output) optimized traffic signal time

Traffic Signal Controllerly

This class will interface with the traffiz Signals of each intersection updating the timings based on the optimized forameters Awided by the traffic signal optimizer.

Traffic monitoring Doshtward !

This class will provide a use interface for traffix manager and city additions to modific traffic signals timings is needed

The java application will integrate these Components to Create a complicative traffic signals optimizedion system that can report to Changing trattle postern in real-time.

Victorialization and Propring &

Signal timing Chartol

line Charts displaying the signal Cycle length green times.

and our timing parameters for each intersection overtime

Performana metices.

Barchorts can line graphs showing the improvements in average wait times. Congrest on reduction and other rey performance indicators. user interface)

The traffic monitoring Dashboard" will serve as the primary interface for taffic managers and City offices to interact with taffic signal optimization system. This durboard should include the following features.

Peal-time traffic monitoring?

live visualization of the ffic conditions of traffic

Conditions and signal timings at each intersection,

For each intersection's simply soils sithat hand Analyse the traffic data to determine and calculate the optimal signal time. that with world follow -> Trailing donsity other gricolled - it with now we, rollessenting -> Quew length -) pedistain crossings. -> Peak four posterns Replic class Trother date of Adjust the traffic signal timing. If monal adjustment is required to up date the Signal timings. Hivate Ind Nebeli Court Elseit Return the optimized Signal timing. The algorithm will analyze the real-time traffic idates Determine the optimal Signal timings. For each intersection and adjust the manual intervention by thattic manager is needed Implementation? The key the key introdes white side apares stando implement the entraffic signal optimization system in Java, we can create the fallowing main components. 1. Traffiz Pota collection it is about the should be also it quit itis This class with the responsive for gothering real-time traffic a data from the sensors and storing. It in that I data data shurdures, Traffic data optimizer & motorio Complement the Traffic Signal optimization algorithm to analyte the traffic data and Compute the optimal signal timings for each intersection, finiting is to star sition (by all unit tingis affort so similar theres.