SCHOOL OF COMPUTING
Faculty of Engineering

Project Proposal Form MCSD 6215
Sem:……. Session:……

SECTION A: Project Information.

Program Name:	**Masters of Science (Data Science)**
Subject Name:	**Project 1 (MCSD 6215)**
Student Name:	Sun Qi
Metric Number:	MCS231030
Student Email & Phone:	sunqi@graduate.utm.my +60 17-208-2853
Project Title:	Traffic flow analysis about the Malaysian city Johor Bahru
Supervisor 1:	
Supervisor 2 / Industry Advisor(if any):	

SECTION B: Project Proposal

Introduction:

Traffic problems have been a major issue related to people's livelihood since ancient times, and smooth and convenient transportation is conducive to people's travel. However, in the city of Johor Bahru in Malaysia, traffic problems affect people's travel every day, especially in several large arterial roads, Jalan Wong Ah Fook, Jalan Skudai, Jalan Abdullah Ibrahim, these arteries are important traffic arteries connecting the city center and surrounding areas because they are connected to the city center and intersect with many main roads, so they are more likely to become hot spots for traffic congestion during peak hours. Commuting to and from work in the morning and evening is a serious hindrance to people's travel. At the same time, due to the proximity of Johor Bahru to Singapore, there are a large number of migrant workers coming and going in Singapore every day, and these people also exacerbate the traffic problem in Johor Bahru, so accurate and timely traffic flow forecasting is essential to help people plan their trips properly and help the traffic management department to carry out effective traffic control.

Problem Background:

The problem of traffic congestion in Johor Bahru is a problem that plagues both local residents and Malaysian and Singaporean workers, and the problem is caused by a combination of factors
(1) Special geographical location
Johor Bahru is close to Singapore and is an important hub for the movement of people and goods between the two countries, with a large number of tourists and cross-border workers flowing around every day. Carrying nearly 300,000 people a day, Johor Cswy is one of the busiest land borders in the world.
(2) Rapid urban development and population growth
Johor Bahru is one of the fastest growing cities in Malaysia, with an impressive rate of population growth and urban expansion, and the location of many universities attracting many students from home and abroad, and the transportation infrastructure is far from keeping up with the rapid development of the city, which greatly increases the pressure on existing roads.
and (3) the limitations of public transportation
Public transport in Johor Bahru is not well developed, and people tend to travel independently, with private cars and motorbikes being the main means of transport, which also leads to an increase in vehicles on the road during rush hour, which congests traffic.
(4) Insufficient road planning
Some major roads such as Jalan Tebrau, alan Wong Ah Fook were not designed to accurately predict future traffic flows, resulting in insufficient design capacity of the roads. In addition, the layout and timing of traffic lights in Johor Bahru are not reasonable.
(5) The impact of tourism
Johor Bahru has several large shopping malls as well as some tourist attractions, which attract many tourists and locals on weekends and holidays, thus exacerbating the traffic problem during these times.

Aim of the Project:

The goal of traffic flow analysis is to analyze vehicle information on the road, as well as road information on congested road sections at different times, as well as other traffic conditions to ensure that traffic is safe, efficient, and sustainable. Analyzing traffic flow information is of great significance for urban

planning, reducing the work of road management departments and improving people's travel efficiency.

Scopes of the Project:

Geographical Scope : Focused on the Malaysian city of Johor Bahru
Data Scope: Leverage a variety of data sources, including historical traffic flow data, real-time traffic flow data, public transit data, and more
Methodology: Data Analysis & Visualization, Python

Expected Contribution of the Project:
1. Improve the road safety index: Alleviate traffic pressure by optimizing and analyzing traffic flow data
2. Optimize the use of infrastructure: ensure that transportation hubs and various roads exert their capacity
3. Reduce the burden of government work

Project Requirements:

Software:	MySQL, Visual Studio Code, RStudio, scikit-learn, TensorFlow
Hardware:	High-Performance Computers, Cloud storage options
Technology/Technique/ Methodology/Algorithm:	Python, R, data visualization, machine learning, EDA,

Type of Project (Focusing on Data Science):

[ ]	Data Preparation and Modeling
[Y]	Data Analysis and Visualization
[ ]	Business Intelligence and Analytics
[ ]	Machine Learning and Prediction
[ ]	Data Science Application in Business Domain

Status of Project:

[Y]	New
[ ]	Continued
If continued, what is the previous title?	

SECTION C: Declaration

I declare that this project is proposed by:

[ ] Myself

[ ] Supervisor/Industry Advisor ( )

Student Name: .....

....

Signature **Date**

SECTION D: Supervisor Acknowledgement

The Supervisor(s) shall complete this section.

I/We agree to become the supervisor(s) for this student under aforesaid proposed title.

Name of Supervisor 1: .....

....

Signature **Date**

Name of Supervisor 2 (if any): .....

....

Signature **Date**

SECTION E: Evaluation Panel Approval

The Evaluator(s) shall complete this section.

Result:

[ ] FULL APPROVAL [ ] CONDITIONAL APPROVAL (Major)*

[ ] CONDITIONAL APPROVAL (Minor) [ ] FAIL*

***** Student has to submit new proposal form considering the evaluators' comments.

Comments:

Name of Evaluator 1:

Signature **Date**

Name of Evaluator 2:

Signature **Date**