SCHOOL OF COMPUTING
Faculty of Engineering

Project Proposal Form MCST 1043
Sem:…………. Session:…………………

SECTION A: Project Information.

Program Name:	**Masters of Science (Data Science)**
Subject Name:	**Project 1 (MCST 1043)**
Student Name:	LIQIZHI
Metric Number:	MCS241026
Student Email & Phone:	
Project Title:	Market Analysis Utilizing Time Series Analysis to Forecast Future Market Trends
Supervisor 1:	
Supervisor 2 / Industry Advisor(if any):	

SECTION B: Project Proposal

Introduction:

This project purposes to apply the time series analysis methodology to make the projection of the financial markets in the future. Through the exploration of historical market data and identification of some determinants, we are going to make a predictive model, which will be able to provide significant insights to both the businesses and the investors.

Problem Background:

The identification of the accurate trend line is an essential task for enterprises and stock traders in making guided decisions. Time series analysis presents one of the most accurate methods of studying market behavior and predicting trends. All the same, the conventional methods of trend analysis often overlook the financial market's complexity.

Problem Statement:

The complex task is in the development of a proper and precise time series model that is able future market trends as a result of using historical data and the identification of key factors who helped to push the market one way or another at that point of time.

Aim of the Project:
The target of this study is the use of time series forecasting equations in order to come out with a forecasting model that will provide an accurate trend to follow.

Objectives of the Project:
1. Master the theory and practice of time series forecasting.
2. Get market data, as well as clean it for analysis.
3. Find out market trends and understand the main factors of influence.
4. Create a time series prediction model and put it to a test.
5. Translate results into concrete advises and suggestions for businesses and fund managers based on model forecasts.

Scopes of the Project:
The subject market will be selected (e.g., stock market, real estate market, commodity market), and the prediction model will be built using past data. The generation of this model will be done by using a set of different evaluation parameters in order to check the reliability of the model as well as its accuracy.

Expected Contribution of the Project:
Initiating a deeply built workflow for the market analysis in terms of the rising and falling market tendencies. Establishing a robust and precise time series data model to make future price predictions. Delivering viable insights and advice for companies and funds managers, which will be based on the model's predictions.

Project Requirements:

Software:	Python, R, MATLAB, or any other relevant data analysis software
Hardware:	A computer with basic data processing and analysis capabilities.
Technology/Technique/ Methodology/Algorithm:	Time series analysis, statistical analysis, machine learning algorithms (e.g., ARIMA, SARIMA, Exponential Smoothing).

Type of Project (Focusing on Data Science):

[   ]   Data Preparation and Modeling

[   ]   Data Analysis and Visualization

[   ]   Business Intelligence and Analytics

[✔]   Machine Learning and Prediction

[   ]   Data Science Application in Business Domain

Status of Project:

[✔]   New

[   ] <u>Continued</u>

If continued, what is
the previous title? <u></u>

SECTION C: Declaration

I declare that this project is proposed by:

        [✔   ]   <u>Myself</u>

           [   ]   <u>Supervisor/Industry Advisor (   )</u>

Student Name: <u>LIQIZHI</u>

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: <u></u>

Signature	**Date**

Name of Supervisor 2 (if any): <u></u>

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: