

**A GRAPHICAL USER INTERFACE (GUI) FOR THE AIR
POLLUTANT INDEX (API) IN KLANG VALLEY**

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ABSTRACT

Pollutant may come from air, river, sea, land and etc. In this project the analysis will be focusing on the air pollution. To reflect the dangerous of the air pollution effect on human health the Air Pollutant Index (API) is introduced. Air Pollution Index (API) is a system that provides information about the level of the air quality level in simple terms to the public. There a five major pollutants parameter included in Malaysia's API which consist of ozone (O₃), nitrogen dioxide (NO₂), carbon dioxide (CO), sulphur dioxide (SO₂) and suspended particulate matter less than 10 micron(PM₁₀). The main target of developing the Graphical User Interface or GUIs is to create an interface that take advantages of computer graphic capabilities to transformed the statistical Air Pollution Index (API) data into graphical form which make it easier to be analyzed. In this final project the GUI for determining the API has being developed and tested.

TABLES OF CONTENTS

CHAPTER	TOPIC	PAGES
	DECLARATION	i
	ACKNOWLEDGEMENTS	ii
	ABSTRACT	iii
	TABLE OF CONTENTS	iv
	LIST OF FIGURES	vi
	LIST OF TABLES	viii
	LIST OF ABBREVIATION	ix
CHAPTER 1	INTRODUCTION	
	1.0 Introduction	1
	1.1 Project objective	2
	1.2 Scope of work	3
	1.3 Thesis organization	3
CHAPTER 2	PROJECT METHODOLOGY	
	2.0 Introduction	4
	2.1 Graphical User Interface (GUI)	5
CHAPTER 3	AIR POLLUTANT INDEX	
	3.0 Introduction	6
	3.1 Air Pollutant Index (API)	6
	3.2 Air Pollutant Index (API) formula	8
	3.3 Sources of air pollution	10

CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Substance altering physical or chemical properties of the air, added in sufficient concentration to produce a measurable effect on man or vegetation, are considered as pollutants [1]. Air pollution at ground level can bring harm to human health if their concentrations exceed certain acceptable levels. As pollutions accumulate in or near large metropolitan areas this typically exposes people to unhealthy environment. Nowadays many studies has been done to emphasized that localized critical concentrations of air pollutants can seriously affect air quality [1] - [3]. Many studies in fact, have emphasized that localized critical concentration of pollutants can seriously affect air quality. The evidence of air pollutant affects on man, animals and vegetation has suggested the need for better understanding of the involved phenomena. Its characteristics have not changed significantly in the most recent decade, but atmospheric process knowledge and the control technology have been improved and legislative regulations for threshold emission have been implemented [1,2].

There are five type of air pollutant that contributed to the API in Malaysia. The air pollutants are the ozone (O₃), carbon monoxide (CO), sulphur dioxide (SO₂), nitrogen dioxide (NO₂) and suspended particulate matter less than 10 micron (PM₁₀). O₃ is a gas that composed of three atoms of oxygen. O₃ occurs both in earth atmosphere and at ground level. O₃ can irritate the respiratory system, causing coughing, throat irritation and uncomfortable sensation in the chest. CO is an odorless, colorless gas and tasteless gas lighter than air [1], [4] and that is a by-product of the burning of fuels. CO is inhaled and enters the blood stream; there it binds chemically to hemoglobin, the substance that carries oxygen to the cells, thus reducing the amount of oxygen delivered to all tissues of the body. The percentage of hemoglobin inactivated by CO depends on the amount of air breathed, the concentration of CO in