

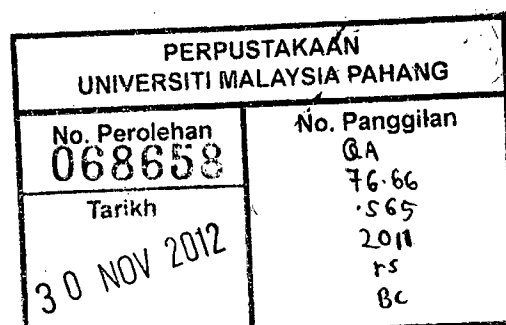
**ONLINE FUEL CONSUMPTION COST CALCULATOR
(OFCCC)**

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ABSTRACT

Recently, fuel price becomes as hot topic and never ending issue especially the demand of fuel is very high. Malaysia Government has stood up in helping citizens by giving certain amount of money per vehicle owner to reduce their burden. However, the solution of reducing the total amount of fuel cost and consumption seems to be more helpful if the citizens can plan their fuel expenditure efficiently without unnecessary spend. Therefore, new software namely Online Fuel Consumption Cost Calculator (OFCCC) has been developed to help user plan and calculates the total amount of fuel cost for a car to travel based on the distance given, driving speed, weight capacity and current market fuel price cost. This software has been developed by using Microsoft Web Expression 2 and SQL Server database system. The result shows that the users can obtain a minimum cost towards the desired destination by using OFCCC.

Keywords: OFCCC, database, software, fuel.

ABSTRAK

Pada masa sekarang, harga minyak menjadi topic hangat dan satu isu yang tidak pernah berkesudahan lebih-lebih lagi dengan peningkatan harga minyak sekarang. Kerajaan telah mengambil langkah untuk membantu rakyat dengan memberikan subsidi minyak tetapi langkah ini akan lebih berhasil jika rakyat lebih tahu untuk menggunakan minyak yang diberikan dengan berkesan serta mengelakkan pembaziran. Jadi, satu system, iaitu “Online Fuel Consumption Cost Calculator” dibangunkan untuk membantu pengguna merancang dan mengira jumlah harga petrol untuk suatu-suatu perjalanan berdasarkan jarak, kelajuan, bilangan penumpang, serta harga minyak semasa. System ini dibangunkan dengan menggunakan Microsoft Web Expression 2 and PHPMYAdmin version 5.3.2. Kesan daripada system ini menunjukkan pengguna boleh merancang perjalanan ke destinasi berdasarkan harga minyak yang minimum.

Kata kunci: OFCCC, simpanan data, sistem, minyak.

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LIST OF ABBREVIATION

OFCCC	Online Fuel Consumption Cost Calculator
FCCE	Fuel Cost Consumption Estimator
CC	Cubic Centimeter
RM	Ringgit Malaysia
KM	Kilometers
CO²	Carbon Dioxide
FTP	Federal Test Procedure
4X4	Four-Wheel
AWD	All-Wheel
KM/H	Kilometers per Hour
L	Liters
°C	Degree Celsius
SQL	Structured Query Language
IT	Information Technology
RDMS	Relational Database Management System
RAD	Rapid Application Development
SDLC	Software Development Life Cycle
DFD	Data Flow Diagram
ERD	Entity Relationship Diagram

CHAPTER 1

SYSTEM INTRODUCTION

1.1 INTRODUCTION

Online Fuel Consumption Cost Calculator (OFCCC) was build to help all car drivers especially students, staff, and lecturers at Universiti Malaysia Pahang (UMP) to reduce the fuel usage consumption and to save money as maximum as we can. This system will analyzed, make calculation based on the path that has been set and then convert the total result to other foreign currency also based on the criteria's that has been chosen that are the speed of the car, the engine power (cc), car tr nsmission, passengers, and distance of the travel.

The time estimation also will be provided after each distance calculation is made. So, user will know how much time will be taken to reach their destination. User also can modify the six (5) factors that have been chosen up until his/her are satisfied with the result on what they needed. Then, user can try the data 3 times to get the conclusion about what type of travel data is the best for the journey. Moreover, the system provide user with a 'Google Map' technology to search the distance for their destination so that the users will know the exact distance to the destination.

1.2 PROBLEM STATEMENT

1. Sometimes users do not know their distance to the destination, so this system will help user to get the distance by using the 'Google Map' technology.
2. Fuel Consumption Cost Estimator (FCCE) only show the total in Ringgit Malaysia (RM),so this system will make the total can be change in others international converter such as Yen, US Dollar, Euro and etc.
3. From 1st September 2010 onwards, the Malaysian government will be introducing these 2 grades of fuel in the petrol kiosk that are RON 97 and RON 95 and the RON 92 will be taken out. So, probably there will be difference performance and fuel consumption using the different types of petrol. This system will try to calculate what types of petrol can save the money and also what type of petrol less usage for the travel.

1.3 OBJECTIVES

The objectives of the system and researches are to:

1. Develop the Online Fuel Consumption Cost Calculator (OFCCF) by considering enhancement of Fuel Consumption Cost Estimator (FCCE).
2. To find the minimum fuel consumption cost and compares its performance with FCCE.
3. To estimate minimum time to a destination to other destination using Google Map.

1.4 SCOPE

The scopes of this system are:

1. The system can be used by all people especially UMP community such as students, lecturers and staff.
2. There will be top 3 of the Malaysian's most popular car to be used in this system which based on their ranking. Car tested were Perodua Myvi, Perodua Viva and Proton Saga BLM. Refer Appendix A for the list of the most Malaysian's popular cars.
3. This system estimated the current types of petrol that are Ron '95 and Ron '97 only.

1.5 THESIS ORGANIZATION

This thesis contains six (6) chapters. Chapter 1 will introduce the propose application that is, “Online Fuel Consumption Cost Calculator (OFCCC)”, the problem statement, objective and scope. Chapter 2 explains about the literature research of this project. Chapter 3 explains about the methods to be used to develop this system. Chapter 4 describes about the system that has been developed. Chapter 5 explains about the analysis come from the result. Lastly, chapter 6 emphasize on the conclusion of the overall application.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Nowadays, the fuel price is changing accordingly to the economic system and the price is not same as before. Thus, the system will do the calculating based on the current fuel's price and type. Choosing the right fuel's type, vehicle's type, following the best driving methods and following the manufacturer's recommendations for operating your vehicles can save a lot of money and time. Furthermore, the system will help to reduce the consumption of fuel by using it in a smart way to prevent waste of money and budgets.

Table 2.1 Current statistic of fuel price

Harga runcit minyak Malaysia (RON 97)				
Tarikh	Harga baru	Perubahan	Harga sejagat¹	Perubahan
	RM/liter	Peratus (%)	AS\$/tong	Peratus (%)
Sebelum 1990	0.89	-	18.33 (1989)	-
1990	1.10	25	24.49	33.6
1 Oktober 2000	1.20	9	24.68	0.8
20 Oktober 2001	1.30	8.3	25.90	4.9
1 Mei 2002	1.32	1.5	30.86	19.2
31 Oktober 2002	1.33	1	24.53	5.3
1 Mac 2003	1.35	1.5	31.54	28.6
1 Mei 2004	1.37	1.5	40.28	27.7
1 Oktober 2004	1.42	3.6	53.13	91.8
5 Mei 2005	1.52	7	56.26	5.9
31 Julai 2005	1.62	6.6	58.70	4.3
28 Februari 2006	1.92	18.5	61.64	5
5 Jun 2008	2.70	41	121.00	96.3
23 Ogos 2008 ²	2.55	(5.6)	114.60	(5.3)
25 September 2008	2.45	(3.9)	109.20	(4.7)
15 Oktober 2008	2.30	(6.1)	84.07	(23)
1 November 2008	2.15	(6.5)	64.38	(23)
18 November 2008	2.00	(7.0)	55.37 /	(13)
3 Disember 2008	1.90	(5.0)	46.96	(15)
16 Disember 2008	1.80	(5.3)	46.28	(1.4)
1 September 2009	2.05	13.9	69.96	51.2
15 Julai 2010	2.10			
2 November 2010	2.15			
1 Disember 2010	2.30		83.84	

2.2 A STUDY ON FUEL CONSUMPTION

The Federal Test Procedure (FTP) is a standardized laboratory test method used in Canada and the United States on new vehicles. Selected pre-production prototypes of new vehicle models are “run in” for about 6000 kilometers (km) before testing. Vehicles are mounted on a programmable two-wheel laboratory chassis dynamometer. Then a trained driver runs them through simulated city and highway driving cycles. All vehicles, including four-wheel (4X4) and all-wheel drives (AWD), are tested in two-wheel drive mode. However, tests are adjusted to reflect the increased weight and engine load using 4X4 and AWD systems [1]. Fuel consumption ratings are generated based on test cycles and correction factors that take into account the aerodynamic efficiency, weight, rolling resistance and drive mode of different vehicles and the achievable real-world driving conditions in Canada. Other adjustments are made to reflect the average fuel consumption of vehicle configurations, options and sales mixes sold in Canada.

2.3 A STUDY ON EXISTING SYSTEM

As a guide for this Online Fuel Consumption Cost Calculator (OFCCC), some existing systems were picked and were analyze to get the methods and also how the fuel consumption is calculated. The lists of all the existing systems are:

1. Fuel-Mileage Computer
2. Travel Distance Calculator
3. Fuel Consumption Estimation
4. Internet-Based Method For Determining A Vehicle's Fuel Efficiency
5. Fuel Consumption Cost Estimator(FCCE)
6. The Canadian Fuel Consumption Calculator