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APPLICATION OF FLAT RATE OR COMPOUND RATE USING

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Abstract

This research used either flat rate or compound rate for an application. Developing a new computer program was constructed. The program was written by visual basic.net and contributed to persons who need to assist in a decision making for trading by some finance or loan. Moreover, the method of finance has a switched bottom to the effective rate in the same condition; this is comfortable and easy to use. The program supported the financial loan, the loan declining system and effective rate report to user.

Keywords : financial loan, flat rate, effective rate, loan declining system.

Introduction

Presently technologies are necessary for both rural and urban people. Especially money has become really essential for their lifestyle. If some families have no money, they seem arduous a lot. Anyway, if someone want to purchase something whether a new thing or few one, he has only two types of making a decision; either buying new things with cash, or leasing (loan). In this study, we are only interested in buying–selling with loan including with the introduction of computer technology used to help for assisting to make a decision on the method.

Materials and methods

Firstly, for most consumers, leasing a new vehicle every two or three years would be more expensive than buying one and keeping it after the final payment. Other consumers are quite content to lease a vehicle they could never afford to buy, even if it doesn't necessarily save money. Payment system for buying-selling cars can be classified into two categories; financing and declining system. To be convenient in calculation results about the down payment, interest, and the period of the payment by the computer, we have developed a computer program to assist in the buying - selling cars or motorcycles with installment both financing and declining loan.

For financing system, the method of the interested cost is

$$I = p\,r\,t \qquad (1)$$

where I : interest, p : principle amount, r : interested rate (per year), and t : time(year)

Summery amount is

$$S = p + I \qquad (2)$$

where I : interest, p : principle amount, and S : total amount.

The installment period depends on how many months a customer or user need. Sample; the customer wants 5 years or 60 months. The periods are calculated by dividing total amount over the month total, that is, assuming total amount is 667,000 then the installment period is 667,000/60 = 11,116.67.

For the loan reduce system, the interest is calculated over the principle amount still outstanding. As a result, many loans are amortized so that a greater amount of principle amount remains outstanding for a longer period of time. The installment period is done by the method of

$$S = R\left((1+i)^n - 1\right)/i \qquad (3)$$

where i : interest per term, n : term total, S : total amount, and R : an installment period

For the new and used car or motorcycle, there are two separations. The main option is about an include VAT amount for every buying-selling new car on the total amount. Another case is always an higher interested rate for the used car selling system.

Secondly, the "visual basic.net" was done for this programing system that applied the technology assisting in decision making for the buying or selling car. Besides, the various formulas are used in the program. The program still requires knowledge both computer and mathematics for merging to applied with the new system. That is about the relationship; into, onto, and 1-1 in managing the databases.

Moreover, the effective rate is compared with financial interested rate; the flat rate can be called as a financial interested rate. This reason is done for an assisting to the car or motorcycle purchasing-selling decision making.

Results and discussion

As applying two phase methods of financing and declining system, the computer program is so easy to use and comfortable to assist in making decision. The program can calculate for both new cars and used cars .Both systems can find out the down payment in terms of the percentage pattern and the amount. Also, the principle amount of the total payment, values of each period to pay, and all the interest throughout the installment are determined in the program. These are shown step by step in the figures.

Figure 1. The first starting program page

Figure 2. Describing the way to process or calculation
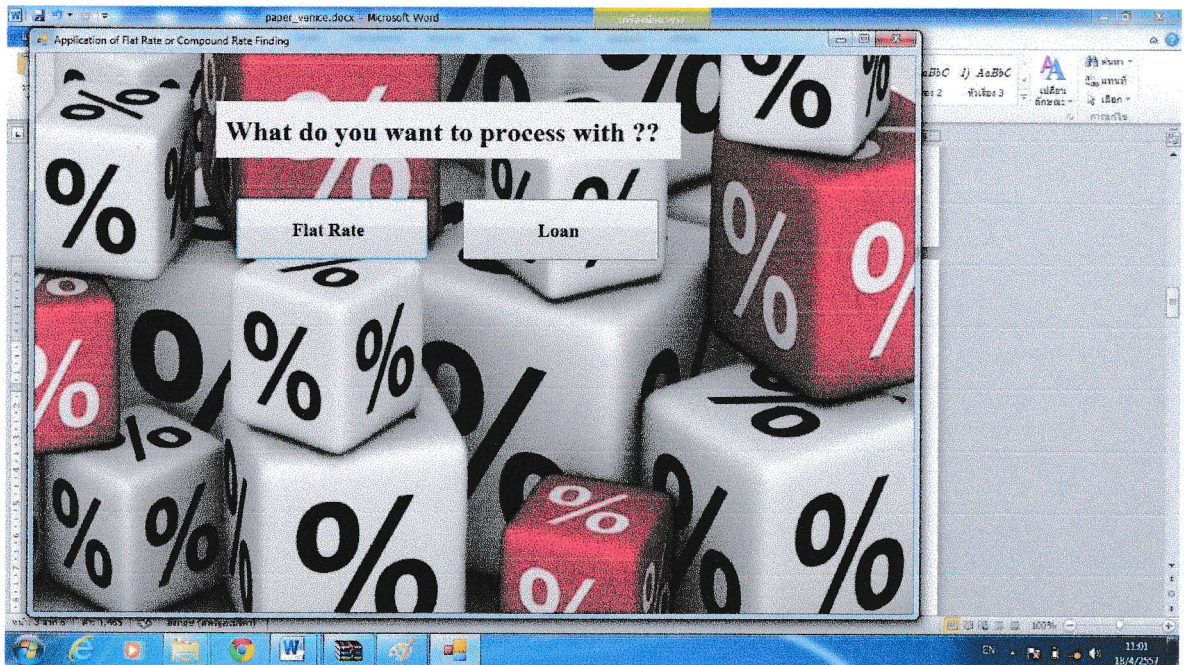
After doing the computer program, the first starting program page shall be seen with Figure1. If users select to enter program, figure2 will be done. There are 2 ways to do process, the new car or used car. Suppose that the user chooses the new car bottom the figure3 always presents. Only financing or loan system is the case for controlled selecting users. At first assuming the user clicks the finance bottom, so the page of figure4 continues to show. The user will see many empty fields to put some numbers, but there are any difference colors in each field. Some fields are white and other are gray. The user can put some numbers to only white blank. The gray space will be full after the user processes the process bottom; the program will calculate automatically that the user has seen in the figure5.

Figure 3. While the user chooses "Finance" in figure3

This figure (figure3) will present everything about user's principle dept, down payment, adjust principle, interested rate, installment period (cost), and total terms. The last two lines are "back", "process", "go to loan", and "effective rate" bottoms. When the user selects a bottom; go to loan, figure6 should be presented.

Figure 4. Showing of the complete fields after the user fills in the blank

Figure 5. Paging while the user chooses "Go to loan" in figure4

Figure6, this page will be an entrance way to compute in a loan reduce system(declining system). The same as some spacing in figure3, the user has to put numbers to every white blocks. After you clicks process, figure5 will be active. The user can see many details for this system.

Figure 6. The page of complete filling in figure6

Moreover; the user can find the comparative report about the financing declining and effective-rate system in the figure8; this page shall be conclude every type of details.

Figure 7. The comparative report of the financing declining and effective-rate
system

	Finance	Loan	Effective rate
Principle	552,500.00	552,500.00	552,500.00
Rate/year	2.55	4.50	4.59
Times/year	4.00	6.00	4.00
Total Cost	608,855.00	631,466.90	605,823.67
Total Interest	56,355.00	78,966.90	53,323.67
Annuities/Month	12,684.48	8,770.40	12,621.33
Total/Times	48.00	72.00	48.00

Figure 8. The effective rate report

For the figure8, the effective rate page and details should be run after
the user does to fill completely and the program is processed.

Conclusion

The program computer written in "visual basic.net" with application of mathematical formulas in conjunction with the making a decision on is very convenient to users for assisting in a car/motorcycle buying-selling.

The program can calculate for both financial rate and compound rate. Both systems can find out the down payment in terms of the percentage form and the amount. Also, the program can compute the principle amount of the total payment, values of each period to pay, and all interest throughout the installment. Moreover, the calculations described above, program users can compare the loan with the financing system with regard to the effective rate. And this application also helps reckon the loan with declining as well.

Acknowledgment

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