

CAR INSURANCE CALCULATOR

INTRODUCTION

Car Insurance Calculator is a C++ program that allows car owners to calculate and estimate their car insurance cost for the year. The calculator should be able to estimate the cost of insurance based on the vehicle's market price, coverage type, engine capacity, No Claim Discount (NCD) and additional coverage for certain car parts or for natural disaster . There are two coverage type which is Comprehensive coverage and Third-party coverage.

Comprehensive coverage is available to protect you against vehicle damages not caused by a collision whereas Third-party insurance coverage is a policy that protects against the actions of another party. No Claim Discount (NCD) is the privilege for car owner to claim an amount of discount for sum insured if no claim has been made in one duration of year. The calculator should be able to estimate the cost of insurance based on the criteria given.

PROGRAM FUNCTIONS

Function CAR MARKET PRICE

- Receive car market price from user.
- Use if-else statement. If user enter value zero, it will terminate and ask again.
- This is a void function because it does not return any value.

Function FIRST PART INSURANCE

- In car insurance, we need user to choose location (west Malaysia or East Malaysia), coverage type (comprehensive or third party) and engine capacity per cc.
- User will choose from the option provided
- This criteria will determine the value of first thousand of sum insured.
- $Basic\ premium = ((Market\ price - 1000)/1000) * location\ charges + first\ thousand\ of\ sum\ insured$

Function NO CLAIM DISCOUNT

- User have privilege to claim an amount of discount for sum insured if no claim have been made in one duration of year
- The no claim discount is fixed

- Function will receive basic premium from global declaration
- For comprehensive coverage,

$$(gross\ premium = basic\ premium - (less\ NCD))$$

- For third party coverage,

$$(gross\ premium = 75\% \text{ of } basic\ premium - (less\ NCD))$$

Function OPTIONAL COVERAGE

- User have three option to select additional coverage
- Function will receive gross premium and car market price from global declaration and update gross premium,

$$(gross\ premium = gross\ premium + optional\ coverage)$$


Function LAST PART INSURANCE

- For car insurance, the current total will be added with 6% GST and RM10 stamp duty.
- The total of car insurance will be displayed here.
- void function calculate,

$$Total = gross\ premium + 6\% \text{ GST} + RM10 \text{ stamp duty.}$$

SAMPLE OF CAR INSURANCE CALCULATOR

1. Full sample of program.

 C:\Users\Iman\Downloads\programming\carinsurance2.exe

```
-----Welcome to Car Insurance calculator!-----

      Please enter the market price of your car = RM 50000
Location west(W) OR east(E): W
COVERAGE TYPE: (C) COMPREHENSIVE OR (T) THIRD PARTY: C
Select engine capacity:(not exceeding)
(1) 1400 cc
(2) 1650 cc
(3) 2200 cc
(4) 3050 cc
(5) 4100 cc
(6) 4250 cc
(7) 4400 cc
(8) over 4400 cc: 2
1579.00

Choose No Claim Discount below: write (digit) only
(1) zero year - 0%
(2) first year - 25%
(3)second year - 30%
(4)third year - 38.33%
(5)forth year - 45%
(6)fifth year - 55%
Answer: 2
UPDATED GROSS PREMIUM is :RM 1184.25

Do you need additional coverage? true=1 false=0
1
Optional coverage: please choose in (digit):
(1) Natural disaster - 0.5% of sum insured
(2) Windscreen and Audio System - 15% of sum insured
(3) Strike,Riot and Civil Commotion - 0.3% of sum insured
2

TOTAL WITH OPTIONAL COVERAGE IS RM1259.25
FINAL TOTAL (INCLUDING 6% GST AND STAMP DUTY)
RM1344.81
Do you want to continue? y=yes anykey=no R

-----
Process exited after 49.15 seconds with return value 0
Press any key to continue . . . █
```

2. Function carmarketprice and firstPartInsurance

```
C:\Users\Iman\Downloads\programming\carinsurance2.exe
-----Welcome to Car Insurance calculator!-----

      Please enter the market price of your car = RM 50000
Location west(W) OR east(E): W
COVERAGE TYPE: (C) COMPREHENSIVE OR (T) THIRD PARTY: C
Select engine capacity:(not esceeding)
(1) 1400 cc
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(3) 2200 cc
(4) 3050 cc
(5) 4100 cc
(6) 4250 cc
(7) 4400 cc
(8) over 4400 cc: 2
1579.00
```

3. Function noClaimsDiscount

```
Choose No Claim Discount below: write (digit) only
(1) zero year - 0%
(2) first year - 25%
(3)second year - 30%
(4)third year - 38.33%
(5)forth year - 45%
(6)fifth year - 55%
Answer: 2
UPDATED GROSS PREMIUM is :RM 1184.25
```

4. Function additionalCoverage

```
Do you need additional coverage? true=1 false=0
1
Optional coverage: please choose in (digit):
(1) Natural disaster - 0.5% of sum insured
(2) Windscreen and Audio System - 15% of sum insured
(3) Strike,Riot and Civil Commotion - 0.3% of sum insured
2
```

5. Final total value of car insurance.

```
TOTAL WITH OPTIONAL COVERAGE IS RM1259.25
FINAL TOTAL (INCLUDING 6% GST AND STAMP DUTY)
RM1344.81
Do you want to continue? y=yes anykey=no R

-----
Process exited after 49.15 seconds with return value 0
Press any key to continue . . . █
```