



# Institute of Computer Engineering Technology

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 **iCET Certified Developer**

## Coursework

<b>Assignment</b>	Programming Fundamentals
<b>Batch No</b>	iCD 109
<b>Name</b>	Tax Calculator
<b>Ass. Date</b>	07th April 2024

# TAX Calculator

## Case Study

Taxation is done in different ways in several categories. It is difficult to calculate manually and you are assigned to create a tax calculator to make it easier. When the amount earned under each tax category is input, the system should calculate the amount of tax to be paid and give it as output. Also, this system has the ability to calculate leasing payments.



Figure 1 – Use case Diagram

## Requirements

You are supposed to create a Java application to calculate TAX. In the application, you need to implement the following use cases.

When you run the application, you should come up with something similar to the following Command Line Interface (CLI), where the user can enter an option number that he wants to execute. This will be the Home Page of the application that you will be developing (Figure 2).

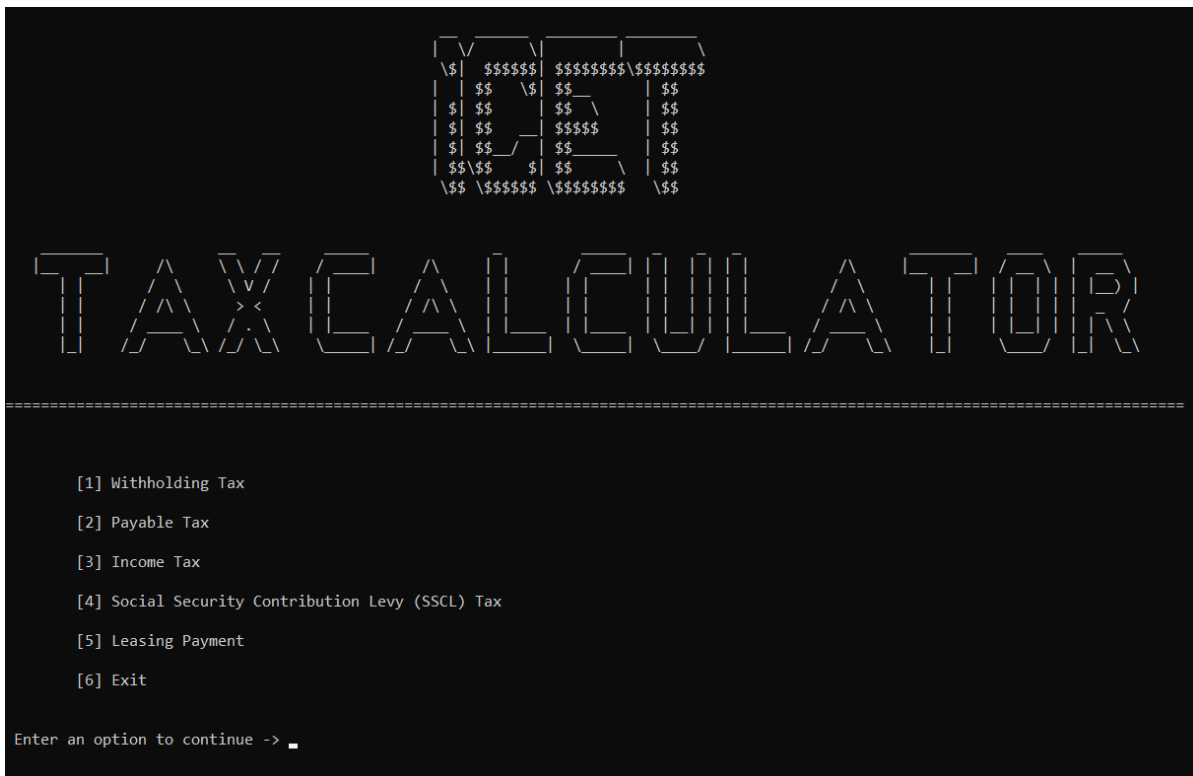
The image shows a terminal window with a dark background. At the top, there is a decorative header made of dollar signs (\$) and backslashes (\) arranged in a grid-like pattern. Below this, the words "TAX CALCULATOR" are displayed in a large, hollow, blocky font. A horizontal line of equals signs (=) separates the title from the menu. The menu consists of six numbered options: [1] Withholding Tax, [2] Payable Tax, [3] Income Tax, [4] Social Security Contribution Levy (SSCL) Tax, [5] Leasing Payment, and [6] Exit. At the bottom, there is a prompt "Enter an option to continue -> " followed by a cursor.

Figure 2 - Home Page of the TAX CALCULATOR

## 1. Withholding Tax

There are three categories of Withholding Tax. When the user selects the Withholding Tax category correctly, the user can see the following output related to the category. The withholding Tax options are given below (Figure 3) and the user can enter an option number that he wants to execute.

```
+-----+
|               WITHHOLDING TAX               |
+-----+

[1] Rent Tax

[2] Bank Interest Tax

[3] Dividend Tax

[4] Exit

Enter an option to continue ->
```

Figure 3 - Withholding TAX options

## I. Rent Tax ([Demo](#))

Rent Tax is a tax that is collected by the organization when a person provides a service to the organization. In Rent Tax, 10% is charged for all payments above Rs.100 000, and no tax is charged up to Rs.100 000. If the service value is less than Rs.100 000, print “You don’t have to pay Rent Tax...”. (Figure 6)

When the user inputs the payment amount, the system should count the amount of the Rent Tax and display it.

Input values should be validated, which means input values should be greater than 0 (can not input negative values). If the user has entered an invalid value, the user should be kept prompted until he enters a valid value (Figure 5).

Once the system calculates Rent Tax successfully, a message should prompt to ask whether the user wants to calculate Rent Tax again or go back to the main menu (Figure 4). If the user input “Y”, the user can calculate Rent Tax again. If the user inputs “N”, the user can go to the Home page.

```

+-----+
|              RENT TAX              |
+-----+
Enter your rent      : 200000
You have to pay Rent Tax : 10000.00

Do you want to calculate another Rent Tax (Y/N) :

```

Figure 4 – Rent Tax

```

+-----+
|              RENT TAX              |
+-----+
Enter your rent      : -200000
Invalid input...

Do you want to enter the correct value again (Y/N): _

```

Figure 5 – User Input Validate

```

+-----+
|                RENT TAX                |
+-----+
Enter your rent      : 50000
    You dont have to pay rent tax...

Do you want to calculate another Rent Tax (Y/N) :

```

Figure 6 – When the service charge is less than Rs.100 000

## II. Bank Interest Tax ([Demo](#))

Bank Interest Tax is charged from the annual bank interest. Bank Interest Tax is 5% of annual interest. When the user inputs the annual bank interest amount, the system should count the amount of the Bank Interest Tax and display it (Figure 7). Values should be validated as previously. Once calculate the Tax value is correct, it should prompt whether to calculate Bank Interest Tax again or go back to the main menu.

```
+-----+
|                                     |
|                               BANK INTEREST TAX                             |
|                                     |
+-----+

Enter your bank interest per year      : 50000

You have to pay Bank Interest Tax per year : 2500.00


Do you want to calculate another Bank Interest Tax (Y/N) : _
```

Figure 7 – Bank Interest Tax

### III. Dividend Tax (Demo)

Dividend Tax is a tax that is collected from stock market dividends. In Dividend Tax, 14% is charged for all dividends above Rs.100 000, and no tax is charged up to Rs.100 000. If the dividend value is less than Rs.100 000, print “You don’t have to pay Dividend Tax...”. Values should be validated as previously. Once calculate the Tax value is correct, it should prompt whether to calculate Dividend Tax again or go back to the main menu.

```

+-----+
|               DIVIDEND TAX               |
+-----+

Enter your total dividend per year      : 150000

You have to pay Dividend Tax per year : 7000.00

Do you want to calculate another Dividend Tax (Y/N):

```

Figure 8 - Dividend Tax

```

+-----+
|               DIVIDEND TAX               |
+-----+

Enter your total dividend per year      : 50000

You dont have to pay Dividend Tax...

```

Figure 9 – When dividend TAX less than Rs.100 000

## 2. Payable Tax ([Demo](#))

The company keeps a percentage of an employee's salary and pays it as a tax, it is called Payable Tax. The percentage of monthly Payable Tax is given below.

- Payable Tax is charged above Rs.100 000 and no tax is charged up to Rs.100 000.
- Rs.100 000 to the 1<sup>st</sup> Rs.41 667 (100 000 – 141 667) - 6%
- Rs.141 667 to the 2<sup>nd</sup> Rs.41 667 (141 667 – 183 333) - 12%
- Rs.183 333 to the 3<sup>rd</sup> Rs.41 667 (183 333 – 225 000) - 18%
- Rs. 225 000 to the 4<sup>th</sup> Rs.41 667 (225 000 – 266 667) - 24%
- Rs.266 667 to the 5<sup>th</sup> Rs.41 667 (266 667 – 308 333) - 30%
- More than Rs.308 333 - 36%

Monthly Income	Tax rate	Tax
100,000	NIL	
141,667	6%	2,500
183,333	12%	7,500
225,000	18%	15,000
266,667	24%	25,000
308,333	30%	37,500
350,000	36%	52,500
450,000	36%	88,500
550,000	36%	124,500
650,000	36%	160,500
750,000	36%	196,500
900,000	36%	250,500
1,000,000	36%	286,500

Several monthly incomes and the total Payable Tax are given in the above table.  
Ex:- If an employee receives Rs.900 000 salary per month, his total amount of monthly Payable Tax is Rs.250 500.

Values should be validated as previously. Once calculate the Tax value is correct, it should prompt whether to calculate Payable Tax again or go back to the main menu.

```

+-----+
| PAYABLE TAX |
+-----+

Enter your employee payment per month : 300000

You have to pay Payable Tax per month : 35000.00

Do you want to calculate another Payable Tax (Y/N): _

```

Figure 10 - Payable Tax

```

+-----+
| PAYABLE TAX |
+-----+

Enter your employee payment per month : 50000

You don't have to pay Payable Tax...

Do you want to calculate another Payable Tax (Y/N):

```

Figure 11 – When Payable TAX less than Rs.100 000





#### 4. Social Security Contribution Levy (SSCL) Tax ([Demo](#))

A Social Security Contribution Levy (SSCL) is a payable tax imposed on importers, manufacturers, service providers, wholesalers, and retailers. SSCL Tax calculates in two steps. The steps are given below.

##### Step 1

Add sale tax to the value. (Sale Tax -2.5%)

Ex:- value of Goods -100 000

Sale tax -  $100\,000 \times 2.5\% = 2\,500$

Value of Goods ( after sale tax added ) –  $100\,000 + 2\,500 = 102\,500$

##### Step 2

Add VAT to the Value of Goods after the sale tax added.(VAT -15%)

Ex:- Value of Goods ( after sale tax added ) – 102 500

Value of Goods ( after VAT added ) –  $102\,500 \times 15\% = 15\,375$

Total SSCL Tax = Sale Tax + VAT

= 2 500 + 15 375 = 17 875

User input values should be validated as previously. Once calculate the Tax value is correct, it should prompt whether to calculate SSCL Tax again or go back to the main menu.

```
+-----+
|          SOCIAL SECURITY CONTRIBUTION LEVY (SSCL) TAX          |
+-----+

Enter value of Good or Service : 100000

You have to pay SSCL Tax      : 17875.00

Do you want to calculate another SSCL Tax (Y/N):
```

Figure 13 - SSCL Tax



```
+-----+
|               Calculate Leasing Payment               |
+-----+

Enter lease amount      : 2500000
Enter annual interest rate : 22
Enter number of year    : 3
Your monthly instalment  : 95476.13

Do you want to calculate another monthly instalment (Y/N):
```

Figure 16 - Calculate Monthly Installment System

Once calculate the Monthly Installment is correctly, it should prompt whether to calculate the Monthly Installment again or go back to the main menu.

```
+-----+
|               Calculate Leasing Payment               |
+-----+

Enter lease amount      : 1000000
Enter annual interest rate : 22
Enter number of year    : 6
      Invalid number of year... Enter the correct value again...

Enter number of year    : 3
Your monthly instalment  : 38190.45

Do you want to calculate another monthly instalment (Y/N):
```

Figure 17 - When input incorrect year

## II. Search Leasing Category ([Demo](#))

First, the user should enter the lease amount and the annual interest rate. The annual interest rate must be greater than 0%. The system should display monthly payments of 3 years, 4 years, and 5 years of leasing plans.

```
+-----+
|                                     |
|                               Search Leasing Category                               |
|                                     |
+-----+

Enter lease amount      : 2500000

Enter annual interest rate : 22

Your monthly instalment for 3 year leasing plan - 95476.13
Your monthly instalment for 4 year leasing plan - 78765.19
Your monthly instalment for 5 year leasing plan - 69047.28

Do you want to Search another Leasing Category (Y/N):
```

Figure 18 - Search Leasing Category

## III. Find the Leasing Amount ([Demo](#))

First, the user should enter the monthly lease payment amount user can pay, the annual interest rate, and the number of years. The annual interest rate must be greater than 0% and the maximum number of the year is 5. Finally, the system should calculate the total leasing amount available from the leasing company.

```
+-----+
|                                     |
|                               Find Leasing Amount                               |
|                                     |
+-----+

Enter the monthly lease payment amount you can afford : 50000

Enter number of year      : 3

Enter annual interest rate : 22

You can get Lease Amount      : 1309228.00

Do you want to calculate another monthly instalment (Y/N): _
```

Figure 19 - Find Leasing Amount System

## Guideline

- Refer to the Coursework Guidelines at the end to understand the specific guidelines to be followed when developing the project required.
- You can't create classes except for the class that holds the main method.
- Use the Scanner class to get input from the command-line interface.
- All validations that have been mentioned in this document should be implemented
- It is not required to clear the command line screen while navigating between the options.
- Demo Videos are given at relevant places for you to understand the coursework requirement better and Demo videos may help you to clarify your doubts to some extent.
- Upload your code file (.java) without renaming it to the designated submission platform before the deadline. (JAVA codes with screen shots/.png files are not valid. ONLY (.java) files are valid.)