

## QUESTION

The Inland Revenue Board of Malaysia (IRBM) is one of the main revenue collecting agencies of the Ministry of Finance. One of the services provided by IRBM is collecting an individual income tax that shall be charged for each year of assessment.

Through digital initiatives introduced by the IRBM board, you as a software engineer have been given a task to develop a system based on the UML diagram in **Figure 4**. The system is called the e-Filing system, which allows taxpayers to fill in and submit income tax forms online.

The execution of the system starts with the creation of a taxpayer as a system user. The taxpayer is required to input the amount of annual employment income, the eligible individual's reliefs(exemption) and tax rebate as shown in **Figure 5** with the information provided in **Table 5**.

- i. To calculate an amount of **Total Income** based on expression in **Figure 6**.
- ii. To calculate an amount of **Total Exemption** based on expression in **Figure 7**.
- iii. To calculate an amount of **Taxable Income** based on expression in **Figure 8**.
- iv. To calculate an amount of **Income Tax Amount** based on expression in **Figure 9** and should be based on information in **Table 6**.
- v. To calculate an amount of **Tax Charged** based on expression in **Figure 10**. The tax charge amount should be set to zero if the tax charged is negative.
- vi. To calculate an amount of **Tax to Be Paid** based on expression in **Figure 11**.

The output of the system can be found in **Figure 12**.

By following the system requirement above, develop a complete Java program based the following questions:

- (a) Develop the Java program by applying the interface concept for `EzHasil`.

[3 Marks]

- (b) Develop `Efiling` class by applying an abstraction concept.

[2 Marks]

(c) By applying an inheritance concept and composition relationship, develop Java program for `TaxPayer` class.

[21 Marks]

(d) Develop the Java program for `Income` class.

[5 Marks]

(e) Develop the Java program for `Exemption` class.

[6 Marks]

(f) Based on the information in **Table 7**, create an object and complete the Java program for `TaxReportingMain` class by following the skeleton program in **Figure 13**.

[13 Marks]

(Notes: Underline words and square box are the output and input of the program respectively)

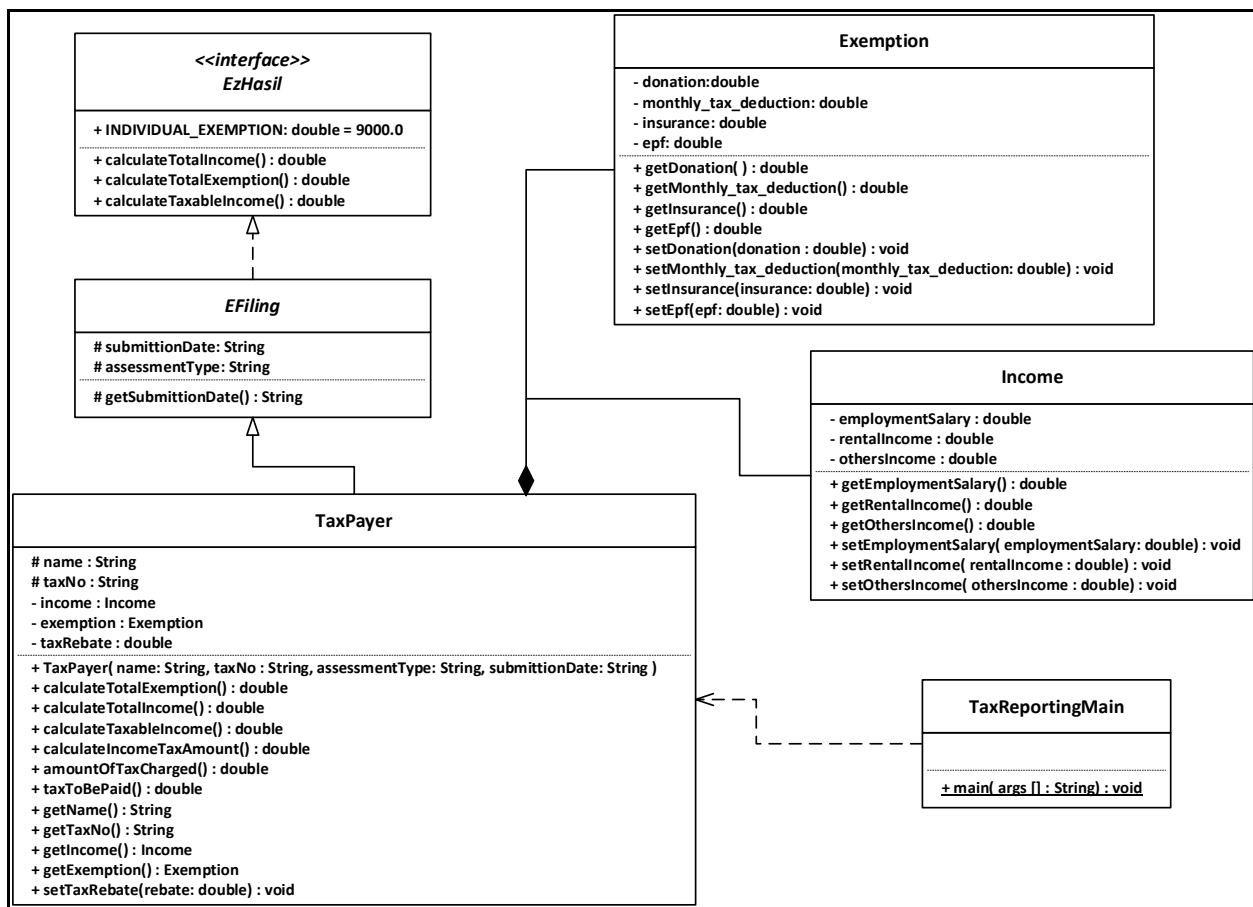


Figure 4

```
**INCOME**  
Employment Salary: RM36000  
Rental Income: RM4800  
Others Income: RM2200  
  
**EXEMPTION**  
Donation: RM500  
Monthly Tax Deduction: RM360  
Takaful/Insurance: RM1200  
EPF: RM1920  
Zakat/Fitrah: RM1320
```

**Figure 5**
$$\text{Total Income} = \text{Employment Salary} + \text{Rental} + \text{Other Income}$$
**Figure 6**
$$\text{Total Exemption} = \text{donation} + \text{Insurance} + \text{EPF}$$
**Figure 7**
$$\text{Taxable Income} = \text{Total Income} - (\text{Total Exemption} + \text{Individual Exemption})$$
**Figure 8**
$$\text{Income Tax Amount} = \text{Base Tax} + ((\text{Taxable Income} - \text{Chargeable Income}) * \text{Tax Rate})$$
**Figure 9**
$$\text{Tax Charged} = \text{Income Tax Amount} - \text{Tax Rebate}$$
**Figure 10**
$$\text{Tax To Be Paid} = \text{Tax Charged} - \text{Monthly Tax Deduction}$$
**Figure 11**

```

**TAX SUMMARY**
Tax Payer Name: Ali
Tax Number: SG001212
Tax Submission Date: 20 March 2022
Total Annual Income: RM43000.0
Total Annual Exemption: RM3620.0
Taxable Amount: RM30380.0
Income Tax Amount: RM461.4
Amount Of Tax Charged: RM0.0
Amount Of (Tax To Be Paid) or (Refund with '-' symbol): RM-360.0

```

Figure 12

Table 5

<b>Annual Gross Income</b>	Employment salary, Rental, Other
<b>Individual Reliefs (Exemption)</b>	Donation, Monthly tax deduction, Insurance/takaful, EPF
<b>Tax Rebate</b>	Zakat/Fitrah

Table 6

Range of Taxable Income	Chargeable Income (RM)	Base Tax Amount (RM)	Tax Rate %
Less than 5,000	5000	0	0
Less than 20,000	20000	0	1
Less than 35,000	35000	150	3
Less than 50,000	50000	600	5

Table 7

Class	Object Name	Parameter	Argument
TaxPayer	tp	name	Ali
		taxNo	SG001212
		assessmentType	Individual
		submissionDate	20 March 2022

```
public class TaxReportingMain {  
    public static void main(String[] args) {  
  
        Scanner input = new Scanner(System.in);  
  
        //user object creation  
  
        System.out.println("**INCOME**");  
        System.out.print("Employment Salary: RM");  
  
        //data input for Taxpayer income  
  
        System.out.println("**EXEMPTION**");  
        System.out.print("Donation: RM");  
  
        //data input for tax reliefs (Exemption) & tax rebate  
  
        System.out.println("**TAX SUMMARY**");  
  
        //output data for tax summary
```

**Figure 13****END OF QUESTION PAPER**