**Family Budget**

The Jackson family has three family members: Papa Jackson, Mama Jackson, and Junior Jackson. They would like to review their family budget of year 2012. In particular, they are interested in their income, the tax, investment and other expenses they have paid. Write a program that prompts for data and produce a report with information as described in each of the sections.

***Income***

Papa Jackson works for a bank and his income is specified as a yearly salary. Mama Jackson works as insurance broker and her income is based on the commission on the policy she sells. She earns 12.5% commission on the house insurance policies and 9.8% on the car policies. Junior works part time as a swimming coach. He is paid with an hourly rate. Assume he works the same number of hours every week.

*Program Input*

* Papa Jackson’s yearly salary
* Amount of house and car insurance policy sold by Mama Jackson in the year
* Junior Jackson’s hourly rate
* Number of hours Junior works per week
* Number of weeks Junior works in the year

*Program Output*

* Total income made by each member
* Total income made by the family
* Average monthly household income

***Tax***

Each of the members is in a different tax bracket:

|  |  |
| --- | --- |
|  | Tax Rate |
| Papa Jackson | 20% |
| Mama Jackson | 15% |
| Junior Jackson | 5% |

*Program Output*

* Amount of tax paid by each member
* Total amount of tax paid by the family
* Overall tax rate (the percentage of the family income paid for tax)
* Total net income of the family
* Average monthly net income

***Investment***

Every year, the family invest 8% of their net income on stock.

*Program Input*

* Price of one share of stock. The price of one share of stock is normally given in a fraction. Therefore the input for the unit price should be three values: whole dollar portion, numerator and denominator for the fraction portion.

*Program Output*

* Amount of investment
* Number of share of stock invested

***Expenses – Electricity Bill***

Electricity is charged by kilowatt-hour. Each unit is 16 cents. There is a 2% utility tax. The utility company offers a 10% discount for a certain number of months of the year. For the rest the year, a one-time $50 rebate is given. The 10% discount does not apply to the utility tax (utility tax should be calculated based on the pre-discounted amount). The rebated amount is not taxed (The rebate is deducted before the tax is calculated).

*Program Input*

* Number of units of electricity used over the year
* Number of months the 10% discount is offered

*Program Output*

* Total cost of the electricity bill for the year

***Expenses – Phone Bill***

The family joins a pay-as-you-go plan. The phone company charges them a certain amount each time they have used a block of time (a certain number of minutes)

*Program Input*

* Number of minutes used over the year
* Number of minutes in a block of time
* Amount charged for a block of time

*Program Output*

* Total cost of the phone bill for the year

**Expenses – Gas**

The family owns one vehicle.

*Program Input*

* Brand and type of their vehicle (e.g. Honda Civic)
* Distance (in km) travelled over the year
* Vehicle’s fuel efficiency (km / L)
* Average gas price of the year ($ / L)

*Program Output*

* Total cost of gasoline for the year

**Expenses – Mortgage**

The mortgage payment is deducted from their account every two weeks

*Program Input*

* Amount of each bi-weekly mortgage payment

*Program Output*

* Total mortgage pay for the year (assuming there are 52 weeks in the year)

**Other Expenses**

After the tax, investment and expenses, the remaining money is divided as follows: 60% for groceries, 25% for entertainment, 15% for cash saving

*Program Output*

* Amount used on groceries
* Amount used on entertainment
* Amount of cash saving

**Summary**

A summary of the family budget for the year

*Program Output*

* Total household gross income
* Total tax paid
* Total expenses
* Total reserve (money not spent: investment and saving)

Since this program involves a large number of input and output, special attention should be paid to its user friendliness. Prompts for input should be clear and precise. Output should be well organized. You do not have to worry about rounding numbers in this assignment, e.g., the dollar values do not have to be rounded to two decimal places. However, pay special attention to the type of the output, e.g., some output should be an integer, instead of a real number.

Save the program as **FamilyBudget.java**

**Due Date:** Wednesday, February 27, at the beginning of class

Sample Run:

ÏÏ§Ï---------- INCOME ----------  
¼¼§ÏWhat is the yearly salary of Papa Jackson? 99000  
¼¼§ÏHow much house insurance did Mama Jackson sell? 150000  
¼¼§ÏHow much car insurance did Papa Jackson sell? 300000  
¼¼§ÏHow much does Junior Jackson make for an hour? 12.5  
¼¼§ÏHow many hours per week does Junior Jackson work? 15  
¼¼§ÏHow many weeks did Junior Jackson work last year? 40  
ÏÏ§ÏThe total family gross income is 154650.0  
ÏÏ§Ï  
ÏÏ§Ï---------- TAX ----------  
ÏÏ§ÏTax paid by Papa: 19800.0  
ÏÏ§ÏTax paid by Mama: 7222.5  
ÏÏ§ÏTax paid by Junior: 375.0  
ÏÏ§ÏTotal net income is $127252.5  
ÏÏ§ÏOverall tax percentage is 17.71580989330747%  
ÏÏ§ÏAverage monthly net income: $10604.375  
ÏÏ§Ï  
ÏÏ§Ï---------- INVESTMENT ----------  
ÏÏ§ÏPlease enter price for one share of stock..  
¼¼§ÏPlease enter the whole number portion: 1  
¼¼§ÏPlease enter the numerator of the fraction portion: 3  
¼¼§ÏPlease enter the denominator of the fraction portion: 4  
ÏÏ§Ï$10179.75 is invested on 5817 shares of stock.  
ÏÏ§Ï  
ÏÏ§Ï---------- ELECTRICITY ----------  
¼¼§ÏHow many unit of electricity over the year? 12000  
¼¼§ÏAfter how many months did the discount finish? 3  
ÏÏ§ÏTotal electricity bill: 1859.4  
ÏÏ§Ï  
ÏÏ§Ï---------- Phone Bill ----------  
¼¼§ÏNumber of minutes spent over the year: 1322  
¼¼§ÏNumber of minutes in a block of time: 100  
¼¼§ÏCost for each block of time: 25.32  
ÏÏ§ÏCost of phone bill: 329.16  
ÏÏ§Ï  
ÏÏ§Ï---------- GAS ----------  
¼¼§ÏBrand and type of the vehicle: BMW X5  
¼¼§ÏDistance travelled over the year: 22000  
¼¼§ÏFuel Efficiency (km/L): 3.2  
¼¼§ÏAverage gas price ($/L): 1.24  
ÏÏ§ÏTotal cost of gasoline for the year: 8525.0  
ÏÏ§Ï  
ÏÏ§Ï---------- MORTGAGE ----------  
¼¼§ÏAmount of bi-weekly mortgage payment: 1086  
ÏÏ§ÏTotal mortgage payment for the year: 28236.0  
ÏÏ§Ï  
ÏÏ§Ï---------- OTHER EXPENSES ----------  
ÏÏ§ÏAmount used on groceries: 46873.914  
ÏÏ§ÏAmount used on entertainment: 19530.7975  
ÏÏ§ÏAmount of cast saving: 11718.4785  
ÏÏ§Ï  
ÏÏ§Ï---------- SUMMARY ----------  
ÏÏ§ÏTotal household gross income: $154650.0  
ÏÏ§ÏTotal tax paid: $27397.5  
ÏÏ§ÏTotal expenses: 105354.27149999999  
ÏÏ§ÏTotal reserve: 21898.228499999997  
ÏÏ§Ï  
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Assessment:

Knowledge & Understanding (20%)

Program can be compiled with no error

Scanner class is used properly to get input from users

Correct data types are used for variables

Proper use of constants

Application (35%)

Correct calculation for *Income*

Correct calculation for *Tax*

Correct calculation for *Investment*

Correct calculation for *Mortgage*

Correct calculation for *Other Expenses*

Summary is correct

Thinking / Inquiry (25%)

Correct calculation for *Electricity Bill*

Correct calculation for *Phone Bill*

Correct calculation for *Gas*

Good Programming Style – (efficient code, no redundant code)

Communication (20%)

User Friendliness (input prompts and output are well formatted and easy to understand)

Programming Practice (properly indented code, appropriate variable names)

Documentation (program header, explanation of code):

Submission (correct file names, conference)