**Income Tax Program**

**Mr. Riche (APCS A)**

**(100 points)**

**1st Quarter Project (Assigned on 8/27/18)**

**Write a Java program that calculates customers’ income taxes using the following rules:**

* The amount of taxes owed equals the taxable income times the tax rate.
* Taxable income equals gross income minus $1,000 for each exemption.
* The taxable income cannot be less than zero.

T**he tax rate is computed using the following table:**

Filing Status Taxable Income Tax Rate

single irrelevant 20%

married irrelevant 25%

co-habiting less than $20,000 10%

$20,000 ─ $50,000 15%

more than $50,000 30%

For each customer processed, the program should print the customer’s tax rate, taxable income, and taxes owed using the format shown in the sample session below.

The program should allow the user to process additional customers as long as he/she enters ‘y’ or ‘Y’ in response to a “Process another customer? (y/n): ” prompt.

The program should perform input validation for the customer’s filing status (only ‘s’, ‘S’, ‘m’, ‘M’, ‘c’, and ‘C’ are acceptable).

Use an appropriate do loop until.

* 1. Write and debug a Java program for this algorithm. It should be able to produce the following screen display.
  2. As an option, perform input validation for the other input entities: gross income (greater than or equal to 0.0), number of exemptions (greater than or equal to 0), process another query (‘y’, ‘Y’, ‘n’, and ‘N’).

Sample session:

J O H N ' S T A X P R E P A R E R

Are you (s)ingle, (m)arried, or (c)ohabiting?

Enter s, m, or c ==> *M*

Gross income ==> *70000*

Number of exemptions ==> *2*

INCOME TAX SUMMARY

tax rate: 25.00%

taxable income: $68000.00

taxes owed: $17000.00

Process another customer? (y/n): *Y*

Are you (s)ingle, (m)arried, or (c)ohabiting?

Enter s, m, or c ==> *m*

Gross income ==> *10000*

Number of exemptions ==> *12*

INCOME TAX SUMMARY

tax rate: 25.00%

taxable income: $0.00

taxes owed: $0.00

Process another customer? (y/n): *y*

Are you (s)ingle, (m)arried, or (c)ohabiting?

Enter s, m, or c ==> *x*

Invalid entry.

Are you (s)ingle, (m)arried, or (c)ohabiting?

Enter s, m, or c ==> *s*

Gross income ==> *20000*

Number of exemptions ==> *0*

INCOME TAX SUMMARY

tax rate: 20.00%

taxable income: $20000.00

taxes owed: $4000.00

Process another customer? (y/n): *y*

Are you (s)ingle, (m)arried, or (c)ohabiting?

Enter s, m, or c ==> *c*

Gross income ==> *13000*

Number of exemptions ==> *4*

INCOME TAX SUMMARY

tax rate: 10.00%

taxable income: $9000.00

taxes owed: $900.00

Process another customer? (y/n): *y*

Are you (s)ingle, (m)arried, or (c)ohabiting?

Enter s, m, or c ==> *c*

Gross income ==> *51000*

Number of exemptions ==> *1*

INCOME TAX SUMMARY

tax rate: 15.00%

taxable income: $50000.00

taxes owed: $7500.00

Process another customer? (y/n): *n*

*Thanks for using the Income Tax Program. Good Bye!*

A good sample-session specification helps you check your program for many different special cases.