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**Course Code: CS 301**

**Assignments #1**

**Chapter 2 Review Questions**

1. Your company needs a program to compute the amount to charge customers for mowing their lawns for an entire season. An employee will type in the total area of the customer’s lawn in square feet. Your company charges 10 cents per square foot to mow a lawn one time

and will mow each lawn once a week for 15 weeks.

* + Step 1 - Get the square feet of the lawn in square feet for the customer
  + Step 2 – Calculate the cost per square foot by multiplying with 10 cent/foot
  + Step 3 – Calculate the total cost to be charged of the customer multiplying the number of weeks with the cost per foot.
  + Step 4 – Return the total cost charge for the customer

|  |  |  |
| --- | --- | --- |
| Input | Operation | Output |
| **Total area**  in square feet | Calculate company charges  Total area in square feet multiplies by 10cents and multiplied by 15 weeks duration. | Total  Amount charged |

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2. You have been asked to write a computer program that will output an Employee’s after tax pay. Your program will read from the keyboard the number of regular hours and overtime hours that the employee worked and the employee’s regular hourly wage. The employee is Paid a bonus of 1.5 times’s regular pay for each overtime hour worked. Tax is 15% of the employee’s gross pay.

* Step 1- Get the hourly employ salary , over time hours, total hours worked
* Step 2- Calculate the salary by multiplying regular hourly salary with regular working hours work.
* Calculate the overtime salary by multiplying the regular pay multiplied by overtime hours
* Step 3- Sum the salary from the regular pay and overtime pay
* Step 4- calculate the salary after tax multiplying the sum of salary with 0.15(15%)
* Step 5- Return the value of Salary after tax

|  |  |  |
| --- | --- | --- |
| Input | Processing | Output |
| * number of regular hours * overtime hours * regular hourly wage | Calculate emp salary after tax:   * Sum   Over time (Regular hourly  wage multiplied 1.5)  Plus (hourly wage multiplied by number of regular hours)  Salary after tax sum multiplied by 0.15 | Employee’s after tax pay |

4. Problem order from 0- 7 in according

1. Get regular hours, overtime hours and regular hours wage from the user
2. Multiply overtime hours by regular hourly wage by 1.5 to get the overtime wage (overpay= overHours \* regularWage \*1.5)
3. Multiply regular hours by regular hourly wage to get the regular pay.

(regPay = regHours \* regWage )

1. Add regular pay and overtime pay to get the gross pay

(grossPay =regPay + overpay)

1. Multiply gross pay by 0.15 to get tax

(tax=grossPay \*0.15)

1. Subtract tax from grosspay to get net pay (netPay=grossPag - tax)

5. Control structure definitions:

**Sequence**: causes the computer to execute statements in the order they are written in the a program from top to bottom.

**Selection**: causes the computer to select one group of statements to execute and another group or group of statements.

**Repetition**: causes the computer to repeat the statement.

6. Control structures

* sequence
* selection
* repetition
* try, catch, and throw