PROBLEM

The owners of the Super Supermarket would like a program that can compute the weekly gross and net pay for an employee. The inputs for the program are the employee’s name, number of hours worked, and hourly rate of pay. Gross pay is the number of hours worked times the hourly rate. Net pay is the gross pay minus deductions. Assume that deductions are taken for tax withholding (30% of gross pay) and parking ($10 per week).

ANALYSIS

IPO Chart

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Type | Input | Processing | Output |
| *first\_name* | String | X |  | X |
| *last\_name* | String | X |  | X |
| *hours* | Float | X |  | X |
| *hourly\_rate* | Float | X |  | X |
| *gross\_pay* | Float |  | X | X |
| *tax* | Float |  | X | X |
| *net\_pay* | Float |  | X | X |

CONSTANTS

TAX\_RATE = 0.3 PARKING\_FEES = 10.0

FORMULAS

gross\_pay 🡨 hours x hourly\_rate

tax 🡨 TAX\_RATE x gross\_pay

net\_pay 🡨 gross\_pay - tax - PARKING\_FEES

HIERARCHY CHART

TEST DATA

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| # | first\_name | last\_name | hours | hourly\_rate | gross\_pay | tax | net\_pay |
| 0 | Farhad | Alemi | 0.0 | 0.0 | $0.00 | $0.00 | -$10.00 |
| 1 | Micro | Soft | 100.0 | 11.0 | $1100.00 | $330.00 | $760.00 |
| 2 | Apple | Macintosh | 0.1 | 12.5 | $1.25 | $0.38 | -$9.13 |
| 3 | Windows | Twelve | 5.0 | 18.0 | $90.00 | $27.00 | $53.00 |
| 4 | Sacramento | College | 152.0 | 99.9 | $15184.80 | $4555.44 | $10619.36 |
| 5 | Computer | Science | 52.0 | 12.5 | $650.00 | $195.00 | $445.00 |

DESIGN (PSEUDOCODE)

**Declare** first\_integer, second\_integer, sum, difference, product, integer\_quotient, integer\_remainder As Integer

**Declare** float\_quotient As Float

**Write** “Enter first integer”

**Input** first\_integer

**Write** “Enter second integer”

**Input** second\_integer

**Set** sum 🡨 first\_integer + second\_integer

**Set** difference 🡨 first\_integer - second\_integer

**Set** product 🡨 first\_integer x second\_integer

**Set** integer\_quotient 🡨 [first\_integer / second\_integer]

**Set** integer\_remainder 🡨 first\_integer MOD second\_integer

**Set** float\_quotient 🡨 first\_integer / second\_integer

**Write** "Enter first integer: " + first\_integer

**Write** "Enter second integer: " + second\_integer

**Write** first\_integer + " + " + second\_integer + " = " + sum

**Write** first\_integer + " - " + second\_integer + " = " + difference

**Write** first\_integer + " \* " + second\_integer + " = " + product

**Write** "[" + first\_integer + " / " + second\_integer + "]" + " = " + integer\_quotient  
**Write** first\_integer + " MOD " + second\_integer + " = " + integer\_remainder

**Write** first\_integer + " / " + second\_integer + " = " + float\_quotient