CLASS ACTIVITIES (13-04-2022)

1. A software is to compute the monthly ***takehome*** of all category of employees of an

establishment. The employee taxation is based on the following constraints:

* If basic salary is less than or equal to N5000, 5% of basic salary is deducted as tax otherwise 8% deducted.
* Also 10% of the employee gross pay should be deducted as part of pension scheme.
* It is require that each employee pay slip should contain employee number, name, total allowance, tax, basic salary, gross pay and Net pay.

***ANALYSIS:***

* **Output requirements:**
  + Employee Number

1 ***mark***

* + Employee Name
  + Total allowance
  + Tax
  + Pension
  + Basic salary
  + Gross pay
  + Net pay
* **Input data:**
  + Employee Number
  + Employee Name

1 ***mark***

* + Basic salary
  + Housing allowance
  + Transport allowance
* **Processing requirements:**
  + If Basic salary is <=5000, Tax = 5% of Basic salary

Else Tax = 8% of basic salary.

2 ***marks***

* + Total allowances = Housing + Transport
  + Gross Pay = Basic salary + Total allowances
  + Contributory pension= 10% of Gross Pay
  + Net pay = Gross pay – (Tax + pension)

***DESIGN: FLOWCHART***

1 ***mark***

Employee Number

Employee Name

Basic salary

Housing allowance

Transport allowance

1 ***mark***

Yes

Is basic salary <= N5000

1 ***mark***

No

Tax = 8% of basic salary

Tax = 5% of basic salary

1 ***mark***

Gross Pay = basicSalary + Housing + Transport

Pension = 10% gross pay

1 ***mark***

Net pay = Gross pay – (Tax + pension)

* + Employee Number
  + Employee Name
  + Total allowance
  + Tax
  + Pension
  + Basic salary
  + Gross pay
  + Net pay

1 ***mark***

**IMPLEMENTATION**:

1. // calculating Netpay: Emolument programme
2. #include<stdio.h>
3. int main()
4. {
   1. char name[40];
   2. int EmpNumber;
   3. float basic, tax, housing, transport, gross, net, pension;
   4. printf("\nEnter Employee\'s name: ");
   5. **scanf("%[^\n]", name); // reads in string including blank space**
   6. printf("\nEnter Employee Number: ");
   7. scanf("%d", &EmpNumber);
   8. printf("\nEnter Basic Salary: ");
   9. scanf("%f", &basic);
   10. printf("\nEnter Housing allowance: ");
   11. scanf("%f", &housing);
   12. printf("\nEnter Transport allowance: ");
   13. scanf("%f", &transport);
   14. if(basic <=5000)
   15. {
       1. tax = .05\*basic; // Note: 5/100\*basic will compute erroneous result
   16. }
   17. else tax = .08\*basic;
   18. gross = basic + housing + transport;
   19. pension = 10/100\* gross;
   20. net = gross -(tax+pension);
5. printf("\nEmployee\'name: %s", name);
6. printf("\nNumber: %d", EmpNumber);
7. printf("\nTax: %f", tax);
8. printf("\nBasic: %f", basic);
9. printf("\nGross: %f", gross);
10. printf("\nNet: %f", net);
11. return 0;
12. }

FINDINGS FROM IMPLEMENTATION:

LINE e: scanf("%[^\n]", name); // reads in string including blank space

Using "%[^\n]" allows you to read in name and other names with blank space separating the names. E.g. Adekola Olubukola

Alternatively;

The following function can also allow you to read in string value with blank space

//Example- Using puts() and gets() functions to read in string with blank space into an array

#include<stdio.h>

int main()

{

char name[14];

printf("Enter your name ");

gets(name);

printf("My name is: ");

puts(name);

return 0;

}

Note:

**LINE e: scanf("%s", name); // reads in string but does NOT accept blank space**

**Also in line i:** tax = .05\*basic;

Writing 5/100\*basic to calculate 5% of basic will compute erroneous result. The tax isa therefore, computed as: tax = .05\*basic and tax = .08\*basic instead of

: 5/100\*basic and 8/100\*basic.

1. (a)Use a loop staement to output the element in the following array named t:

float t[]= {1.0, 3.4, 2.5, 9.0, 7.5, 5.0, 4.0 };

//SOLUTION

#include<stdio.h>

int main()

{

float t[]= {1.0, 3.4, 2.5, 9.0, 7.5, 5.0, 4.0 };

int i;

for(i=0; i<7;++i)

{

printf("\n%.1f", t[i]); //displaying the items

}

return 0;

}

1. With the aid of a loop construct, sum (add) all the elements in the above array and print the result.
2. Write a c program that can do the followings:
3. create an array of integers of size n
4. populate the array with the use of for loop
5. use another for loop to determine the even numbers in the array and print out the even numbers

**SOLUTION**:

#include<stdio.h>

#define n 6

int main()

{

int i, sum =0;

int A[n] ={1, 3, 4, 8, 2, 6};

for(i=0; i<n; ++i)

{

if(A[i]%2==0)

{

printf("\nThis value is even: %d", A[i]);

sum = sum+A[i];

}

}

printf("\n\n The sum of all even in the array = %d", sum);

return 0;

}