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Project 1

Problem Description: We want a Program that will calculate the **salary** of **all** employees . However, there are a lot of factors involved that will vary from **employee**. These factors include, **part time or full time** employee, base salary amount, **commission amount**, have they been working there for 5 **years** or more, what is their commission amount. Other factors that are taken in is the amount of **sales** they make and their **commission rate** . We want it to **print** a nice report for each employee in clean output including their **name** and print the **average** of their commission and salaries in clean output.

Variables from Description:

Class Employee-class to hold values for each employee

 Bool full_time-holds fulltime or part time as t or f

 Double sales-holds amount of sales

 Double commission_rate-holds commission rate for employee

 Double salary_total-holds total salary including commission total

 Double commission_total-holds commission total

 Name-string name_first and string name_last hold these

const double commission_rate_10 = 0.1;

const double commission_rate_15 = 0.15;

const double commission_rate_33 = 0.33;

^^^constants to hold commission rates for each

Int Emply_amnt -holds amount of employees-value is fed into an array for amount of employees

Average- double salary_avg double commission_avg-holds average of commissions and salaries of all employees

Pseudocode:

Class Salesperson That holds, first name, last name, length of employment in years, employment category, sale amount in dollars

Input amount of sales persons

For loop all this that amount of times

Input: Are you Full time or Part time? , if statement

Input: Have you been working here for less than 5 years, or 5 years or longer?

(use these 2 conditionals to identify the employee as one of those 4 specifications)

Input get name years working etc

Assign all to employee object

Use data assigned to do calculations

Print nice outputs

Rinse and repeat

Do averages and output

Source code (I am attaching the.cpp file as well just in case I have tested it in codeblocks as well as my ide so it should run fine just taking the precaution)

#include <iostream>

#include <string>

#include <iomanip>

```cpp
using namespace std;

const double commission_rate_10 = 0.1;

const double commission_rate_15 = 0.15;

const double commission_rate_33 = 0.33;

const int base_10=10000;

const int base_5=5000;

const int base_2=2500;

//declare constants
class Employee {
public:
        string name_first;

        string name_last;
//hold names
        int years;
//number of years working there
        bool full_time;
//full time or part time, true or false
        double sales;
//sales amount in dollars
        double commission_rate;

        //rate for employee
        double commission_temp;
```

```cpp
        double salary_total;
//hold total salary

        double commission_total;
//hold commission total


};


void emp_calc(Employee &John) {
//function to do calculations and assign them to employee variables

        //do commission rates

        if (John.sales > 0 and John.sales <= 15000) {

                John.commission_rate = commission_rate_10;

                //10%

                John.commission_total = John.sales * John.commission_rate;

                //total commission

        } else if (John.sales > 15000 and John.sales <= 60000) {

                John.commission_rate = commission_rate_15;

                //15%

                John.commission_total = ((John.sales - 15000) * John.commission_rate)

                                + 1500;

                //subtract previous 15000 from sales to do math then add 10% gained from

first 15000

        } else if (John.sales > 60000) {
```

```
John.commission_rate = commission_rate_33;

//33%

John.commission_total = ((John.sales - 45000) * John.commission_rate)

        + 8250;

//modify for the above 60000

}
if ((John.full_time) == true)
//full time employees

            {

if (John.years >= 5)

//of 5 years or more

                {

John.salary_total = base_10 + John.commission_total;

//full time + more than 5 years is commission total +10000

} else if (John.years < 5)

//of less than 5 years

                {

John.salary_total = base_5 + John.commission_total;

//full time + less than 5 years is commission total + 5000

}
} else if ((John.full_time) == false)
//part time employees

            {
```

```cpp
        if (John.years >= 5)

        //of 5 years or more

                {

            John.salary_total = base_2 + John.commission_total;

            //part time + more than 5 years is commission total +2500

        } else if (John.years < 5 and John.years > 0)

        //of less than 5 years

                {

            John.salary_total = John.commission_total;

            //part time employee,less than 5 years, salary is commission total

        }


    }
}
;



void emp_print(Employee John) {
//function to print out employee in nice format
    double pretty_rate = John.commission_rate * 100;

    cout << "\n" << setw(7) << "Employee" << setw(25) << "Report" << endl;

    cout << "--------------------------------" << endl;

    cout << "Name" << setw(11) << ":  "

                << John.name_first + " " + John.name_last << endl;
```

```cpp
    if (John.full_time == true) {

        cout << "Status" << setw(9) << ":  " << fixed << "Full time" << endl;

    } else {

        //if part time

        cout << "Status" << setw(9) << ":  " << fixed << "Part time" << endl;

    }

    cout << "Years" << setw(10) << ":  " << fixed << John.years << " years"

            << endl;

    cout << "Comm. Rate" << setw(5) << ":  " << (int) pretty_rate << "%"

            << endl;

    cout << "Comm. Total" << std::fixed << setw(5) << ":  $" << setprecision(2)

            << John.commission_total << endl;

    //add total commission in

    cout << "Salary Total:  $" << std::fixed << setprecision(2)

            << John.salary_total << endl;

    cout << "--------------------------------\n" << endl;

}


int main() {

    double commission_collective = 0;

    double salary_collective = 0;

    int emply_amnt;

    //declare
```

```cpp
cout << "How many Employees work at the store?" << endl;

cin >> emply_amnt;

//get amount of employees to keyboard


Employee store_employees[emply_amnt];


for (int i = 0; i < emply_amnt; i++)
//for the amount of employees
        {
    cout << "What is the First Name?: " << endl;

    cin >> store_employees[i].name_first;

    cout << "What is the Last Name?: " << endl;

    cin >> store_employees[i].name_last;

    cout << "How many years have they worked here?: " << endl;

    cin >> store_employees[i].years;


    while (store_employees[i].years <= 0) {

        cout << "Years working cannot be less than or equal to 0 try again "

                    << endl;

        cin >> store_employees[i].years;

        //error check

    }

    //get employee input info
```

```
            cout

                              << "Do they work full or part time? (Enter T for full time or F

for part time): "

                              << endl;

            string temp;

            cin >> temp;

            if ((temp == "T") or (temp == "t")) {

                    store_employees[i].full_time = true;

            } else if ((temp == "F") or (temp == "f")) {

                    store_employees[i].full_time = false;

            }

            //get full time or part time

            cout << "How many sales do they make in dollars?" << endl;

            cin >> store_employees[i].sales;

            while (store_employees[i].sales <= 0) {

                    cout << "Sales cannot be less than or equal to 0 try again "

                                    << endl;

                    cin >> store_employees[i].sales;

                    //error check

            }


            emp_calc(store_employees[i]);

            //do calculations and assign some things in the object
```

```cpp
            commission_collective += store_employees[i].commission_total;

            salary_collective += store_employees[i].salary_total;

            //add to collectives of all employees salary and commissions

            emp_print(store_employees[i]);

        }

        double salary_avg = salary_collective / emply_amnt;

        double commission_avg = commission_collective / emply_amnt;

        //get average salary and commission

        cout << "\nStore" << setw(27) << "Report" << endl;

        cout << "--------------------------------" << endl;

        cout << "Salary Average" << setw(8) << ":  $" << fixed << setprecision(2)

                << salary_avg << endl;

        cout << "Commission Average" << setw(4) << ":  $" << fixed

                << setprecision(2) << commission_avg << endl;

        //print salary and commission

        cout << "-------------------------------" << endl;

        return 0;

}
```

Testing plan

I plan to test as thoroughly as possible and catch what I can, I also plan to stop by office hours again before final submission to get your final opinion on the code. I plan to test all 4 cases full time less than 5 years full time more than 5 years. Part time less than 5 years part time more than 5 years. I am going to do some runs with error checking of the sales and years working.

Additionally, I have started the program far in advance to ensure that I have an adequate amount of time to complete it and thoroughly check it.

Testing outputs

 As you can see here I tested output with 4 employees I had one of them part time for less than 5 years one part time for more than 5 years one full time for less than 5 years and one fulltime for more than 5 years I also tested using years less than 0 and sales less than 0 both of which triggered my error checks. I also showed that my Boolean statements takes upper and lowercase values. Then I'll do it again for good measure

Note: That the employee report outputs are aligned and formatted nicely in the IDE for some reason it doesn't transfer to word that well

Test 1

How many Employees work at the store?

4

What is the First Name?:

Jeremy

What is the Last Name?:

Scheuerman

How many years have they worked here?:

-1

Years working cannot be less than or equal to 0 try again

3

Do they work full or part time? (Enter T for full time or F for part time):

f

How many sales do they make in dollars?

57543

Employee   Report

Name   : Jeremy Scheuerman

Status   : Part time

Years   : 3 years

Comm. Rate : 15%

Comm. Total : $7881.45

Salary Total: $7881.45

What is the First Name?:

Joey

What is the Last Name?:

Scheuerman

How many years have they worked here?:

6

Do they work full or part time? (Enter T for full time or F for part time):

F

How many sales do they make in dollars?

-4

Sales cannot be less than or equal to 0 try again

-4

Sales cannot be less than or equal to 0 try again

546545

Employee   Report

Name   : Joey Scheuerman

Status   : Part time

Years   : 6 years

Comm. Rate : 33%

Comm. Total : $173759.85

Salary Total: $176259.85

What is the First Name?:

Matthew

What is the Last Name?:

Maxa

How many years have they worked here?:

4

Do they work full or part time? (Enter T for full time or F for part time):

T

How many sales do they make in dollars?

5464

Employee   Report

Name   : Matthew Maxa

Status   : Full time

Years   : 4 years

Comm. Rate : 10%

Comm. Total : $546.40

Salary Total: $5546.40

What is the First Name?:

Connor

What is the Last Name?:

Klebrowski

How many years have they worked here?:

10

Do they work full or part time? (Enter T for full time or F for part time):

t

How many sales do they make in dollars?

13423

Employee   Report

Name   : Connor Klebrowski

Status   : Full time

Years   : 10 years

Comm. Rate : 10%

Comm. Total : $1342.30

Salary Total: $11342.30

Store   Report

Salary Average   : $50257.50

Commission Average: $45882.50

Test 2

How many Employees work at the store?

5

What is the First Name?:

Hailey

What is the Last Name?:

Austin

How many years have they worked here?:

4

Do they work full or part time? (Enter T for full time or F for part time):

t

How many sales do they make in dollars?

0

Sales cannot be less than or equal to 0 try again

45345

Employee   Report

Name   : Hailey Austin

Status   : Full time

Years   : 4 years

Comm. Rate : 15%

Comm. Total : $6051.75

Salary Total: $11051.75

What is the First Name?:

Kevin

What is the Last Name?:

Weller

How many years have they worked here?:

6

Do they work full or part time? (Enter T for full time or F for part time):

T

How many sales do they make in dollars?

45666

Employee   Report

Name   : Kevin Weller

Status   : Full time

Years   : 6 years

Comm. Rate : 15%

Comm. Total : $6099.90

Salary Total: $16099.90

What is the First Name?:

Patrick

What is the Last Name?:

Dempsey

How many years have they worked here?:

0

Years working cannot be less than or equal to 0 try again

-1

Years working cannot be less than or equal to 0 try again

6

Do they work full or part time? (Enter T for full time or F for part time):

F

How many sales do they make in dollars?

65777

Employee   Report

Name   : Patrick Dempsey

Status   : Part time

Years   : 6 years

Comm. Rate : 33%

Comm. Total : $15106.41

Salary Total: $17606.41

What is the First Name?:

John

What is the Last Name?:

Delblanco

How many years have they worked here?:

4

Do they work full or part time? (Enter T for full time or F for part time):

f

How many sales do they make in dollars?

54666

Employee   Report

Name   : John Delblanco

Status   : Part time

Years   : 4 years

Comm. Rate : 15%

Comm. Total : $7449.90

Salary Total: $7449.90

What is the First Name?:

Alec

What is the Last Name?:

Jara

How many years have they worked here?:

15

Do they work full or part time? (Enter T for full time or F for part time):

T

How many sales do they make in dollars?

88999

Employee   Report

Name   : Alec Jara

Status   : Full time

Years   : 15 years

Comm. Rate : 33%

Comm. Total : $22769.67

Salary Total: $32769.67

Store   Report

Salary Average   : $16995.53

Commission Average: $11495.53