**Lab-5 Assignment**

**1)C++ program using friend function with class TCS**

**Algorithm:** In this program we are declaring class TCS with some given variables and assigning a friend function, so that any member in class can be accessible in that function. Then we are creating a member function to assign the values with scope resolution and in the friend function we are going to display the results which uses the members of the class. As in the question to satisfy we wrote a condition statement for experience which tells about salary. In the main function we are calling the show function to show the results.

**Logic:**

#include<iostream>

using namespace std;

class TCS{

string jobname;

int experience;

string location;

int salary;

public:

friend void show(TCS job);

void set\_details(string jn,int exp,string gps,int m);

};

void TCS::set\_details(string jn,int exp,string gps,int m){

jobname=jn;

experience=exp;

location=gps;

salary=m;

}

void show(TCS job){

cout<<"Name of th job : ";

cin>>job.jobname;

cout<<"Experience in years : ";

cin>>job.experience;

cout<<"Location : ";

cin>>job.location;

cout<<"\*\*\*\*\*\*Your Information\*\*\*\*\*\*\*"<<endl;

cout<<"Name of th job : "<<job.jobname<<endl;

cout<<"Experience in years : "<<job.experience<<endl;

cout<<"Location : "<<job.location<<endl;

if(job.experience<2)

{

cout<<"Salary per month is 25000"<<endl;

}

else if(job.experience>2&&job.experience<5)

{

cout<<"Salary per month is 45000"<<endl;

}

else

{

cout<<"Salary per month is 57000"<<endl;

}

cout<<"Submitted by Gelle Hruthesh Reddy, Admn .No 20BCB7031"<<endl;

}

int main(){

TCS job;

show(job);

return 0;

}

**Output:**

Text

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**2)C++ to display the car details with price to be paid**

**Algorithm:** In this program we are declaring class Car with required variables and friend class Discount, and we are going create a function to give the details of the given cars and check whether brand name is TATA or not as it will give discount 10% we use if statement to check whether the user had given TATA or not and User can give n number of cars as we have used for loop. In the main function we are calling the friend function and we will get the results.

**Logic:**

#include<iostream>

using namespace std;

class Car{

string car\_brand;

string color;

int price;

public:

friend void Discount(Car r);

void set\_details(string cb,string c,int p);

};

void Car::set\_details(string cb,string c,int p){

car\_brand=cb;

color=c;

price=p;

}

void Discount(Car r){

int n;

cout<<"Enter total number of cars detail you want to give :";

cin>>n;

string TATA;

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

cout<<"Name of the Car(Only in Capitals) : ";

cin>>r.car\_brand;

cout<<"Color of the Car : ";

cin>>r.color;

cout<<"Price of the Car : ";

cin>>r.price;

cout<<"\*\*\*\*\*\*Car Information\*\*\*\*\*\*\*"<<endl;

cout<<"Name of th Car : "<<r.car\_brand<<endl;

if(r.car\_brand=="TATA")

{

cout<<"As you selected TATA car"<<endl;

cout<<"The Discount Price of the Car is "<<r.price-r.price\*10/100<<endl;

}

else

{

cout<<"Price of the Car is "<<r.price<<endl;

}

cout<<"Color of the Car : "<<r.color<<endl;

}

cout<<"Submitted by Gelle Hruthesh Reddy, Admn .No 20BCB7031"<<endl;

}

int main(){

Car r;

Discount(r);

return 0;

}

**Output: Text

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**3)C++ program to get the details of loan and account.**

**Algorithm:** In this program we have created a class for the bank with objects account number, customer name, balance and then we are assigning the values for the given objects. We have created a new function for deposit which will just add the deposited money into balance and then we are creating subclass called Loan and in that we are giving values called loan capital, due per month, balance loan and in the we are assigning the loan capital, due per month and in that we calculate no of months to pay and divide to total loan with 0% interest and then we calculate the balance after 3 months by subtracting it to 3 multiplied by total loan. In main function we call loan with l and call the remaining function.

**Logic:**

#include<iostream>

using namespace std;

class Bank{

public:

int accno;

string custname;

int balance;

void set\_details(int an,string cn,int b){

accno=an;

custname=cn;

balance=b;

}

void login(){

cout<<"Enter the account number :";

cin>>accno;

cout<<"Enter your name :";

cin>>custname;

cout<<"Enter Balance Amount :";

cin>>balance;

}

void deposit(){

int dp;

cout<<"Enter Deposit Amount = ";

cin>>dp;

balance+=dp;

}

void display(){

cout<<"\*\*\*\*Bank Account Information\*\*\*\*"<<endl;

cout<<"Accout Number : "<<accno<<endl;

cout<<"Customer Name : "<<custname<<endl;

cout<<"Balance : "<<balance<<endl;

}

};

class Loan:public Bank{

public:

int Loan\_Capital;

int due\_per\_month;

int loan\_balance;

void set\_loan(int lc,int m,int lb){

Loan\_Capital=lc;

due\_per\_month=m;

loan\_balance=lb;

}

void Balance(){

int n;

cout<<"Enter the total Loan : ";

cin>>Loan\_Capital;

cout<<"No of Months : ";

cin>>n;

due\_per\_month=Loan\_Capital/n;

cout<<"Due per Month : "<<due\_per\_month<<endl;

cout<<"Loan amount after payment of 3 months : "<<Loan\_Capital-3\*due\_per\_month<<endl;

cout<<"\*\*\*\*Loan Information\*\*\*\*"<<endl;

cout<<"Total Loan : "<<Loan\_Capital<<endl;

cout<<"Due per Month : "<<due\_per\_month<<endl;

cout<<"Balance Loan amount after payment of 3 months : "<<Loan\_Capital-3\*due\_per\_month<<endl;

cout<<"Account Number : "<<accno<<endl;

cout<<"Customer Name : "<<custname<<endl;

cout<<"Submitted by Gelle Hruthesh Reddy, Admn .No 20BCB7031"<<endl;

}

};

int main(){

Loan l;

l.login();

l.deposit();

l.display();

l.Balance();

return 0;

}

**Output:**

**Text

Description automatically generated**

**4)C++ program for Discount price on the plants**

**Algorithm:** In this program we declare class plants with plant name, life time and then we assign them and after we create sub class called crotons which include price and quantity and we calculate total amount by multiplying price into quantity and then we create another sub class for the discount for above 1000 total amount by using if statement we get the discount if it is above 1000 else for other cases and in the main function we create an object for subclass discount and then we call every function required to get results.

**Logic:**

#include<iostream>

using namespace std;

class Plants{

public:

string plant\_name;

int life\_time;

void set\_details(string pn,int lt){

plant\_name=pn;

life\_time=lt;

}

void Info(){

cout<<"Enter the Plant name :";

cin>>plant\_name;

cout<<"Enter the Life time :";

cin>>life\_time;

}

void display(){

cout<<"\*\*\*\*Plant Information\*\*\*\*"<<endl;

cout<<"Plant Name : "<<plant\_name<<endl;

cout<<"Life time of plant : "<<life\_time<<endl;

}

};

class Crotons:public Plants{

public:

int price;

int qty;

int ta;

void set\_loan(int p,int q){

price=p;

qty=q;

}

void Infor(){

cout<<"Enter the Price :";

cin>>price;

cout<<"Enter the Quantity :";

cin>>qty;

ta=price\*qty;

}

};

class Discount:public Crotons{

public:

int p;

void discount\_details(){

if(ta>1000){

cout<<"Price of the Plant is "<<ta-ta\*5/100<<endl;

}

else{

cout<<"Total Amount is "<<ta<<endl;

}

}

};

int main(){

Discount d;

d.Info();

d.display();

d.Infor();

d.discount\_details();

cout<<"Submitted by Gelle Hruthesh Reddy, Admn .No 20BCB7031"<<endl;

return 0;

}

**Output:**

**A screenshot of a computer

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**Time of Submission:** 22/9/2021,22:30