C++ PROGRAMS (29/09/22)

PROGRAM – 1:

Write a program to Calculate the bonus of the employee class master derive the information from both admin and account which derives information from person create a base and derived class with necessary functions.

#include<iostream>

using namespace std;

class person

{

public:

int salary,no,pf,hrent;

char name[20];

void admin()

{

cout<<"Enter the Name = ";

cin>>name;

cout<<"Enter your number = ";

cin>>no;

}

void account()

{

cout<<"Enter your salary = ";

cin>>salary;

cout<<"Enter your pf = ";

cin>>pf;

cout<<"Enter your house loan = ";

cin>>hrent;

}

};

class master:public person

{

float bonus,tot,hra,ta,da,net,detect;

public:

void disp()

{

hra=salary\*15/100;

ta=salary\*20/100;

da=salary;

tot=salary+hra+ta+da;

detect=pf+hrent;

net=tot-detect;

cout<<"\n\n\n";

cout<<"----SALARY DETAILS----"<<"\n";

cout<<"\nThe total salary = "<<tot;

cout<<"\n\nThe amount to be detected = "<<detect;

cout<<"\n\nThe Total salary = "<<net;

}

};

int main()

{

master m;

m.admin();

m.account();

m.disp();

}

OUTPUT:

Enter the Name = HariKrishnan

Enter your number = 192124217

Enter your salary = 16500

Enter your pf = 2500

Enter your house loan = 5000

----SALARY DETAILS----

Name = HariKrishnan

Number = 192124217

The total salary = 38775

The amount to be detected = 7500

The Total salary = 31275

PROGRAM – 2:

Write a C++ program to Demonstrate the multiple inheritance by creating class cuboid which derived from class rectangle and shape calculate the area and volume.

#include<iostream>

using namespace std;

class rectangle

{

public:

int l,b,h;

void rect()

{

cout<<"Enter the value of length = ";

cin>>l;

cout<<"Enter the value of breadth = ";

cin>>b;

cout<<"Enter the value of height = ";

cin>>h;

}

};

class shape

{

public:

int w;

void cub()

{

cout<<"Enter the value of width = ";

cin>>w;

}

};

class cuboid: public rectangle,public shape

{

int a1,v1,a2,v2;

public:

void disp()

{

a1=l\*b;

v1=(l\*b)\*h;

a2=2\*(l\*w)+2\*(h\*w)+2\*(l\*h);

cout<<"Area of rectangle = "<<a1;

cout<<"\nVolume of rectangle = "<<v1;

cout<<"\nArea of Cuboid = "<<a2;

cout<<"\nVolume of Cuboid = "<<v1;

}

};

int main()

{

cuboid c;

c.rect();

c.cub();

c.disp();

}

PROGRAM – 3:

Develop a C++ program to find the sum and product of two numbers using single inheritance.

#include<iostream>

using namespace std;

class sum

{

public:

int x,y,a;

void s1()

{

cout<<"Enter the value of A = ";

cin>>x;

cout<<"Enter the value of B = ";

cin>>y;

}

void disp()

{

a=x+y;

cout<<"\n--- The Solutions ---";

cout<<"\n\nThe sum of A and B = "<<a;

}

};

class product: public sum

{

public:

int p;

void diap1()

{

p=x\*y;

cout<<"\n\nThe product of A and B = "<<p;

}

};

int main()

{

product s;

s.s1();

s.disp();

s.diap1();

return 0;

}

Output:

Enter the value of A = 55

Enter the value of B = 43

--- The Solutions ---

The sum of A and B = 98

The product of A and B = 2365

PROGRAM – 4

Assume the test results of batch of students showed in the three classes, class student store roll no, class test store mark obtained for three subjects, class result total marks and the details of the test and the students grade according to the mark obtained, through the derived class.

#include<iostream>

using namespace std;

class student

{

public:

int r1;

void roll()

{

cout<<"Enter the roll number 1 = ";

cin>>r1;

}

};

class test: public student

{

public:

int a,m1,m2,m3;

void mark()

{

cout<<"Enter the student 1 mark = ";

cin>>m1;

cout<<"Enter the student 2 mark = ";

cin>>m2;

cout<<"Enter the student 3 mark = ";

cin>>m3;

a=(m1+m2+m3)/3;

}

};

class result:public test

{

public:

int tot;

void display()

{

cout<<"\n\nStudent roll number = "<<r1;

cout<<"\nMark 1 = "<<m1;

cout<<"\nMark 2 = "<<m2;

cout<<"\nMark 3 = "<<m3;

tot=m1+m2+m3;

cout<<"\nTotal mark = "<<tot;

cout<<"\n\n= Result = ";

{

if(a>=90)

{

cout<<"\nFirst class\n";

}

else if(a>=80 && a<90)

{

cout<<"\nSecond class\n";

}

else if(a<50)

{

cout<<"\nfail\n";

}

else

{

cout<<"\npass\n";

}

}

}

};

int main()

{

result i;

i.roll();

i.mark();

i.display();

}

Output:

Enter the roll number 1 = 1928

Enter the student 1 mark = 88

Enter the student 2 mark = 76

Enter the student 3 mark = 88

Student roll number = 1928

Mark 1 = 88

Mark 2 = 76

Mark 3 = 88

Total mark = 252

= Result =

Second class

PROGRAM – 5  
develop a class name fruit data member to calculate the number of fruits in the basket, to calculate the number of apples and number of mangoes in the fruit basket and print the total number of fruits in the basket.

#include<iostream>

using namespace std;

class apple

{

public:

int a;

void app()

{

cout<<"Enter the total number of apple = ";

cin>>a;

}

};

class mango

{

public:

int m;

void man()

{

cout<<"Enter the total number of mango = ";

cin>>m;

}

};

class fruit: public mango, public apple

{

public:

int f;

void fru()

{

f=a+m;

cout<<"\n\n--- APPLE ---\n\n";

cout<<"The total number of Apple = "<<a;

cout<<"\n\n--- MANGO ---\n\n";

cout<<"The total number of mango = "<<m;

cout<<"\n\nTotal fruits in the basket : "<<f;

}

};

int main()

{

fruit i;

i.man();

i.app();

i.fru();

}