**C++ Programs (30.09.22)**

PROGRAM – 1:

*Write a C++ program for printing both the base class and derived class using virtual function:*

*#include<iostream>*

using namespace std;

class A

{

public:

void getdata()

{

cout<<"A\n";

}

};

class B:public A

{

public:

void getdata()

{

cout<<"\nB";

}

};

int main()

{

A \*a;

B b;

a=&b;

a->getdata();

b.getdata();

}

PROGRAM – 2:

**Write a C++ program to print the base class and derived class using virtual function:**

#include<iostream>

using namespace std;

class A

{

public:

virtual void getdata()

{

cout<<"a";

}

};

class B:virtual public A

{

public:

void getdata()

{

cout<<"b";

}

};

int main()

{

A a;

B b;

A \*x;

x=&a;

x->getdata();

x=&b;

x->getdata();

}

PROGRAM -3:

**Write a C++ program to calculate the area and the volume of the rectangle create a class area and derive the class volume and use the same member function with same problem parameter for the above class.**

#include<iostream>

using namespace std;

int l,b,h;

class Area

{

public:

virtual void getdata()

{

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

cin>>l;

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

cin>>b;

cout<<"Area of the given rectangle = "<<l\*b;

}

};

class volume: public Area

{

public:

void getdata()

{

cout<<"\nEnter the value of h = ";

cin>>h;

cout<<"Volume of the given rectangle = "<<(l\*b)\*h;

}

};

int main()

{

Area a;

volume b;

Area \*x;

x=&a;

x->getdata();

x=&b;

x->getdata();

}

PROGRAM – 4:

Write a C++ program to calculate the area and the volume of the rectangle create a class area and derive the class volume and use the same member function with same problem parameter for the above class using pointer.

#include<iostream>

using namespace std;

int l,b,h;

class Area

{

public:

void getdata()

{

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

cin>>l;

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

cin>>b;

cout<<"Area of the given rectangle = "<<l\*b;

}

};

class volume: public Area

{

public:

void getdata()

{

cout<<"\nEnter the value of h = ";

cin>>h;

cout<<"Volume of the given rectangle = "<<(l\*b)\*h;

}

};

int main()

{

Area \*a;

volume b;

a=&b;

a->getdata();

b.getdata();

}

PROGRAM – 5:

Derive a code for the given diagram using inheritance.

#include<iostream>

using namespace std;

char name[20];

int x,y,z;

class bank

{

public:

virtual void getrateofinterest()

{

cout<<"=== Bank Details ===\n";

cout<<"Enter your name = ";

cin>>name;

cout<<"Enter the account number of SBI = ";

cin>>x;

cout<<"Enter the account number of AXIS = ";

cin>>y;

cout<<"Enter the account number of ICICI = ";

cin>>z;

}

};

class sbi: public bank

{

public:

float h;

void getrateofinterest()

{

cout<<"\n\n=== SBI ===\n\n";

cout<<"Customer name = "<<name<<"\n";

cout<<"Account number = "<<x<<"\n";

cout<<"Balance = "<<"\n";

cin>>h;

cout<<"Rate of Interest = "<<h\*0.15;

}

};

class icici:public bank

{

public:

float i;

void getrateofinterest()

{

cout<<"\n\n=== ICICI ===\n\n";

cout<<"Customer name = "<<name<<"\n";

cout<<"Account number = "<<z<<"\n";

cout<<"Balance = "<<"\n";

cin>>i;

cout<<"Rate of Interest = "<<i\*0.10;

}

};

class axis:public bank

{

public:

float j;

void getrateofinterest()

{

cout<<"\n\n=== AXIS ===\n\n";

cout<<"Customer name = "<<name<<"\n";

cout<<"Account number = "<<y<<"\n";

cout<<"Balance = "<<"\n";

cin>>j;

cout<<"Rate of Interest = "<<j\*0.05;

}

};

int main()

{

bank b;

sbi s;

icici i;

axis a;

bank \*m;

m=&b;

m->getrateofinterest();

m=&s;

m->getrateofinterest();

m=&i;

m->getrateofinterest();

m=&a;

m->getrateofinterest();

}

PROGRAM – 6:

Write a C++ Program to print the value using exception Handling.

qa#include <iostream>

using namespace std;

main()

{

int x=-1;

try

{

if(x<0)

{

throw x;

cout<<"x is too small";

}

}

catch(int x)

{

cout<<"x is -ve value";

}

cout<<"outside the block";

}

PROGRAM – 7:

Write a C++ program to print the message using user defined Exception Handling:

#include<iostream>

using namespace std;

double division(int a,int b)

{

if(b==0)

{

throw"division by zero";

}

return(a/b);

}

main()

{

int x=50, y=5;

double z=0;

try

{

z=division(x,y);

cout<<z<<endl;

}

catch(const char\*msg)

{

cerr<<msg<<endl;

}

return 0;

}