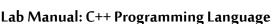


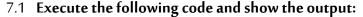
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Faculty of Mathematical Sciences









```
class A
{    public:
        virtual void f() const { std::cout << "base"; } };
class B: public A
{    public:
        virtual void f() const { std::cout << "derived"; } };
std::ostream& operator<<(std::ostream& os, const A& a )
{        a.f();
        return os; }
int main()
{        B b;
        std::cout << b << std::endl;
        return 0; }</pre>
```

7.2 Execute the following code and show the output:

```
class Weapon
       public:
       void loadFeatures()
         { cout << "Loading weapon features.\n"; } };
class Bomb : public Weapon
      public:
       void loadFeatures()
         { cout << "Loading bomb features.\n"; } };
class Gun : public Weapon
       public:
{
       void loadFeatures()
         { cout << "Loading gun features.\n"; } };
int main()
{ Weapon *w = new Weapon;
    Bomb *b = new Bomb;
    Gun *g = new Gun;
    w->loadfeatures();
    b->loadFeatures();
    g->loadFeatures();
    return 0; }
```

7.3 Write a program that has an abstract base class named **Quad**. This class should have four member data variables (floats) representing side lenghts and a pure virtual function **Area**. It should also have a method for setting the data variables. Derive a class **Rectangle** from **Quad** and override the **Area** method so that it returns the area of the **Rectangle**. Write a main function that creates a **Rectangle** and sets the side lengths. Also write a top-level function that will take a parameter of type **Quad** and return the value of the appropriate **Area** function.





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Department of Computer Science

Lab Manual: C++ Programming Language

7.4 Write a class that contains two class data members **numBorn** and **numLiving**. The value of **numBorn** should be equal to the number of objects of the class that have been instanced. The value of **numLiving** should be equal to the total number of objects in existence currently (*ie, the objects that have been constructed but not yet destructed*.)