NPTEL » Programming in C++

Unit 7 - Week 5

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Announcements
                                                                                                       Mentor
Assignment 5
                                                                                    Due on 2020-10-21, 23:59 IST.
The due date for submitting this assignment has passed.
Assignment submitted on 2020-10-17, 21:06 IST
   Consider the program below.
    #include <iostream>
    using namespace std;
    class base {
        static int x1;
        int x2 = 5;
    public:
        void f1() { cout << "f1" << endl; }</pre>
    };
    class derived : public base {
        int d1 = 10;
    };
    int base::x1 = 0;
    int main() {
        derived d;
        cout << sizeof(d) << endl;</pre>
        return 0;
    What will be the output of the above code (consider sizeof(int) = 4)?
 O a) 12
 ⊙ b) 8
 Oc) 4
 Od) 1
Yes, the answer is correct.
Score: 2
Accepted Answers:
b) 8
    Consider the following program.
    #include <iostream>
    using namespace std;
    class base {
    public:
        void f1() { cout << "base.f1" << endl; }</pre>
    };
    class derived : public base {
    public:
        void f1(int a) { cout << "derived.f1" << endl; }</pre>
    };
    int main() {
       derived d;
                                // LINE-1
        d.f1();
        return 0;
    What will be the output/error?
 a) base.f1
 Ob) derived.f1
 c) base.f1
      derived.f1

    d) Compilation error at LINE-1: no matching function for call derived.f1()

Yes, the answer is correct.
Score: 2
Accepted Answers:
d) Compilation error at LINE-1: no matching function for call derived.f1()
3) Consider the following program.
   #include <iostream>
   using namespace std;
   class A {
   public:
        void print() { cout << "Class A" << endl; }</pre>
   };
   class B : public A {
   public:
        void print() { cout << "Class B" << endl; }</pre>
   };
   int main() {
        A *a1 = new A();
        A *b1 = new B();
        a1->print();
        b1->print();
        return 0;
   What will be the output?
 a) Class A
       Class B
 (a) Class A
      Class A
 c) Class B
      Class A
 d) Class B
      Class B
Yes, the answer is correct.
Score: 2
Accepted Answers:
b) Class A
   Class A
4) Consider the following program.
    #include <iostream>
    #include <string>
   using namespace std;
    class A {
        string s1 = "Hello";
   public:
        string get_str() { return s1; }
    class B : public A {
        string s2 = "Hi";
   };
   void print(A &a) {
        cout << a.get_str() << endl;</pre>
   int main() {
        A t1;
        B t2;
        print(t1);
                         // LINE-1
        print(t2);
                           // LINE-2
        return 0;
   What will be the output/error?
 (a) Hello
      Hello
 ob) Hello
      Ηi
 o c) Hi
      Hello
 ○ d) Compilation error at LINE-1: argument mismatch.
Yes, the answer is correct.
Score: 2
Accepted Answers:
a) Hello
   Hello
5) Consider the program below.
    #include <iostream>
   using namespace std;
    class myClassA {
   public:
        int a;
        myClassA(int x) : a(x) { }
   };
    class myClassB : private myClassA {
       int b;
   public:
        myClassB(int x, int y) : b(y), myClassA(x) { }
   };
   int main() {
        myClassB t1(1, 2);
        myClassA t2(5);
        cout << t1.a;
                            // LINE-1
        cout << t2.a;
                             // LINE-2
        return 0;
   Which line will give compilation error in the main() function?
 a) LINE-1

    b) LINE−2

 c) Both LINE-1 and LINE-2
 Od) No Compilation Error
No, the answer is incorrect.
Score: 0
Accepted Answers:
a) LINE-1
6) Consider the following code snippet.
   #include <iostream>
   using namespace std;
   class A {
   public:
       A() { cout << "A "; }
       ~A() { cout << "~A "; }
   };
   class B : public A {
   public:
       B() { cout << "B "; }
       ~B() { cout << "~B "; }
   };
   class C : public A {
       B b;
   public:
       C() { cout << "C "; }
       ~C() { cout << "~C "; }
   };
   int main() {
       C t1;
       return 0;
   What will be the output?
 \bigcirc a) A B C \simC \simB \simA
 \bigcirc b) A C \simC \simA
 \odot c) A A B C \simC \simB \simA \simA
 \bigcirc d) A A B C \simA \simA \simB \simC
Yes, the answer is correct.
Score: 2
Accepted Answers:
c) A A B C \simC \simB \simA \simA
7) Consider the following code segment.
    #include <iostream>
    using namespace std;
    class A {
    public:
        void print() { cout << "Function print" << endl; }</pre>
    };
    class B : private A {
    public:
        B() { _____} // LINE-1
    };
    int main() {
        B t1;
        return 0;
    Fill in the blank at LINE-1 so that it will print: Function print.
 ☐ a) print();
 □ b) A::print;
 c) A.print();

☑ d) A::print();
Yes, the answer is correct.
Score: 2
Accepted Answers:
a) print();
d) A::print();
8) Consider the following program.
   #include <iostream>
   using namespace std;
   class A {
   public:
        A(int i) { cout << "A::" << i << " "; }
        ~A() { cout << "~A "; }
   };
   class B : public A {
   public:
        B(int i) : A(i++) { cout << "B::" << i << " "; }
        ~B() { cout << "~B "; }
   };
   class C : public B {
   public:
        C(int i) : B(i++) { cout << "C::" << i << " "; }
        ~C() { cout << "~C "; }
   };
   void f() {
        static C c(0);
   int main() {
        f();
       C c(5);
       return 0;
   What will be the output?

    a) A::0 B::1 C::1 A::5 B::6 C::6 ~C ~B ~A ~C ~B ~A

 ○ b) A::0 B::1 C::2 ~C ~B ~A A::5 B::6 C::7 ~C ~B ~A
 ○ c) A::0 B::1 C::1 ~C ~B ~A A::5 B::6 C::6 ~C ~B ~A
 \bigcirc d) A::0 B::1 C::2 A::5 B::6 C::7 \simC \simB \simA \simC \simB \simA
Yes, the answer is correct.
Score: 2
Accepted Answers:
 a) A::0 B::1 C::1 A::5 B::6 C::6 \simC \simB \simA \simC \simB \simA
9) Consider the following program.
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2 points

#include <iostream>

using namespace std;

Base(int i = 0) : X(i) { }

Derived(Base b1, int i = 0) : Base(i), b(b1) { }

// LINE-1

// LINE-2

void print1() { cout << X << endl; }</pre>

void print2() { cout << b.X << endl; }</pre>

class Derived : public Base {

class Base {

int X;

Base b;

int main() {

Base b(5);

d.print1();

d.print2();

return 0;

a) 10 5

Ob) 5 10

Score: 2

Yes, the answer is correct.

Accepted Answers:

Derived d(b, 10);

What will be the output/error?

O c) Compilation error at LINE-1

⊕ d) Compilation error at LINE-2

d) Compilation error at LINE-2

protected:

public:

public:

};

};