**CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY**

**DEVANG PATEL INSTITUTE OF ADVANCE TECHNOLOGY & RESEARCH**

Department of Computer Engineering/Computer Science & Engineering/ Information Technology

**Subject Name: Object Oriented Programming with C++**

**Semester: II**

**Subject Code: CE144**

**Academic year: 2020-21**

|  |  |
| --- | --- |
| **No.** | **Aim of the Practical** |
| **22.** | **Check the following C++ code and find if there is any error in code, give justification for the error, correct the code and write the output:**   1. **Example of const member functions**   **#include <iostream> //With Error**  **using namespace std;**  **class sample**  **{**  **int m, n;**  **public:**  **void getdata();**  **void putdata() const;**  **};**  **void sample::getdata()**  **{**  **cout << "Enter m & n";**  **cin >> m >> n;**  **}**  **void sample::putdata() const**  **{**  **m = 12;**  **n = 34;**  **cout << " m = " << m << "n= " << n;**  **}**  **int main()**  **{**  **sample s1;**  **s1.getdata();**  **s1.putdata();**  **return 0;**  **}**  **PROGRAM CODE : (Without Error)**  #include <iostream>  using namespace std;  class sample  {  int m, n;  public:  void getdata();  void putdata() const;  };  void sample::getdata()  {  cout << "Enter m & n";  cin >> m >> n;  }  void sample::putdata() const  {  // m = 12;  // n = 34;  cout << " m = " << m << "n= " << n;  }  int main()  {  sample s1;  s1.getdata();  s1.putdata();  return 0;  }  **OUTPUT:**    **CONCLUSION:** Error is in this code is m & n are constants & we cannot re-assign the value to m & n. To solve this error we should comment lines which is assigning values of m & n.   1. **(a) Pointer to data members**   **#include <iostream> //With Error**  **using namespace std;**  **class student**  **{**  **public:**  **int roll\_no;**  **};**  **int main()**  **{ // declaring pointer to data member**  **int student ::\*p1 = &student::roll\_no;**  **student s;**  **student \*optr = &s;**  **s->\*p1 = 42;**  **cout << "Roll no is " << s->\*p1 << endl;**  **optr.\*p1 = 45;**  **cout << "Roll no is " << optr.\*p1 << endl;**  **return 0;**  **}**  **PROGRAM CODE : (Without Error)**  #include <iostream>  using namespace std;  class student  {  public:  int roll\_no;  };  int main()  { // declaring pointer to data member  int student ::\*p1 = &student::roll\_no;  student s;  student \*optr = &s;  s.\*p1 = 42;  cout << "Roll no is " << s.\*p1 << endl;  optr->\*p1 = 45;  cout << "Roll no is " << optr->\*p1 << endl;  return 0;  }  **Output:**    **CONCLUSION:** Error is in this code is we cannot use arrow operator to access objects & also cannot use dot operator to access pointers.   1. **(b)Pointer to member functions**   **#include <iostream> //With Error**  **class employee**  **{**  **public:**  **void hello()**  **{**  **cout << "Hi hello" << endl;**  **}**  **};**  **int main()**  **{ // declaring pointer to member function hello**  **void (employee ::\*fp)() = &employee::hello;**  **employee e;**  **employee \*optr = &e;**  **(e->\*fp)();**  **(optr.\*fp)();**  **return 0;**  **}**  **PROGRAM CODE : (Without Error)**  #include <iostream>  using namespace std;  class employee  {  public:  void hello()  {  cout << "Hi hello" << endl;  }  };  int main()  { // declaring pointer to member function hello  void (employee ::\*fp)() = &employee::hello;  employee e;  employee \*optr = &e;  (e.\*fp)();  (optr->\*fp)();  return 0;  }  **Output:**    **CONCLUSION:** Error is in this code is using namespace std was missing & arrow operator used to access object.   1. **Example of Local Classes**   **#include <iostream> //With Error**  **using namespace std;**  **void testlocalclass()**  **{**  **class Test**  **{**  **static int cnt;**  **public:**  **void set()**  **{**  **cout << "Enter Count: ";**  **cin >> cnt;**  **}**  **void get();**  **};**  **void Test::get()**  **{**  **cout << "Count: = " << cnt;**  **}**  **Test t;**  **t.set();**  **t.get();**  **}**  **int main()**  **{**  **testlocalclass();**  **return 0;**  **}**  **PROGRAM CODE : (Without Error)**  #include <iostream>  using namespace std;  void testlocalclass()  {  class Test  {  int cnt; //local class should not have static data member  public:  void set()  {  cout << "Enter Count: ";  cin >> cnt;  }  void get()  {  cout << "Count: = " << cnt;  }  };  Test t;  t.set();  t.get();  };  int main()  {  testlocalclass();  return 0;  }  **Output:**    **CONCLUSION:** Error in this code is local classes does not have static data members. |