

*C++.txt - Notepad

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1. A. Class means oru Blueprint... ipo na oru Doll Factory la 100 Dolls Pannapore Athukaga na oru design create pannapore like antha doll oda Size, Colour laam... so athe base panni ennale 100 dolls panna mudium. ipo inga class na Design and plan panradhu tha Class.

idhoda uses :

Reuse panna easy becoz Oru design irundha adhula irundhu pala object create panna mudiyum... Organize panna use aagum becoz ella related details oru idathula store pannalam.... and Control panna easy ah irukum becoz object epdi work pannum nu decide panna mudiyum.

1. B. Object means Real thing That means actual product.
ipo Class na doll (Design: color, size,...) athula object means Object 1 = Barbie doll, Object 2 = Teddy Doll,...

idhoda Applications ennana:

ipo Games la vare Character, weapons ellam object.... and Apps la WhatsApp la oru user object and messages ellam object.

Here, class means idea/ design and object means Real things.

2. Constructor means Object oda birth time laye ready ah values irukum. For Example : ipo oru New mobilke vanguna athula language default ah English la set aairukum and Ringtone um Default ah set Aairukum ithellam tha Constructor

idhoda Uses:

Object create aagumbodhu default ah values set paanum, Repeated-a same code type panna vendam.

3. Method na andha object epdi work pannum nu artham.

4. Encapsulation means hiding the data that means oru object oda details ah veliya kaataama safea cover pannidradhu.

5. Inheritance na Oru class oda features eh vera oru class ku inherit pannradhu... like parents class oda feature children class ku kondu varradhu. and ithoda needs laam Code reuse pannalam and time save pannalam.

6. Polymorphism means Oru actionku multiple ways of power iruku... like oru remotelaye TV and AC control panna mudium.

7. Abstraction na Important details ah mattum kaamchi, unnecessary details hide pannradhu that mean remote la nee button press pannina TV on aagum, but inside circuit epdi work panrathu nu nee therinjikka vendam. user-ku easy-a use panna help pannum.

8. Method Overloading na Same method name use pannitu different inputs handle pannradhu... for eg: human speak() -> speak(Tamil), speak(English), speak(Hindi).

9. Method Overriding means Parent class la oru method irukkum Child class la same method name use panuvom..

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class Friend {
5 public:
6     string name;
7     string favorite_subject;
8 };
9
10 int main() {
11     Friend friend1, friend2;
12     friend1.name = "Alice";
13     friend2.name = "Bob";
14
15     friend1.favorite_subject = "History";
16     friend2.favorite_subject = "Maths";
17
18     cout << friend1.name << " likes " << friend1.favorite_subject << endl;
19     cout << friend2.name << " likes " << friend2.favorite_subject << endl;
20
21 }
```

Output

```
Alice likes History
Bob likes Maths

==== Code Execution Successful ===
```

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3 class Teacher {
4 public:
5     string name, subject;
6 };
7
8 int main() {
9     Teacher t1 = {"Mr. Sharma", "English"};
10    Teacher t2 = {"Ms. Rekha", "Maths"};
11
12    for (char &c : t1.name) c = toupper(c);
13    for (char &c : t2.name) c = toupper(c);
14
15    cout << t1.name << " teaches " << t1.subject << endl;
16    cout << t2.name << " teaches " << t2.subject << endl;
17    return 0;
18 }
```

Output

MR. SHARMA teaches English
MS. REKHA teaches Maths

==== Code Execution Successful ===

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main.cpp

Run Output Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class Department {
5 public:
6     string name;
7     string head;
8 }
9
10 int main() {
11     Department dept;
12     dept.name = "Department of Arts";
13     dept.head = "Dr. Rao";
14
15     cout << dept.name << ", Head: " << dept.head << endl;
16     return 0;
17 }
```

Output:

Department of Arts, Head: Dr. Rao

==== Code Execution Successful ===

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main.cpp

#include <iostream>
using namespace std;

class FunMemory {
public:
 string event_name;
 int year;
};

int main() {
 FunMemory memory;
 memory.event_name = "College Picnic";
 memory.year = 2023;

 cout << "Remembered: " << memory.event_name << " in " <<
 memory.year << endl;
 return 0;
}

Run Output Clear

Remembered: College Picnic in 2023
==== Code Execution Successful ===

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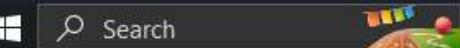
main.cpp

Run Output Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class Student {
5 public:
6     string name;
7     int roll_number;
8     Student(string n, int r) {
9         name = n;
10        roll_number = r;
11    }
12 }
13 int main() {
14     Student s("Shruthi", 101);
15     cout << "Welcome " << s.name << ", your roll number is " << s
16     .roll_number;
17 }
```

Welcome Shruthi, your roll number is 101

--- Code Execution Successful ---

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main.cpp

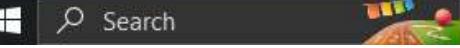
Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class FriendMemory {
5 public:
6     string friend_name;
7     string memory;
8
9     FriendMemory(string f, string m) {
10         friend_name = f;
11         memory = m;
12     }
13 }
14
15 int main() {
16     FriendMemory fm("Alice", "College fest dance");
17
18     cout << "Memory with " << fm.friend_name << ":" << fm.memory << endl;
19     return 0;
20 }
```

Output

Memory with Alice: College fest dance

==== Code Execution Successful ===

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class HOD {
5 public:
6     string name;
7     string department;
8
9     HOD(string n, string d) {
10         name = n;
11         department = d;
12     }
13 }
14
15 int main() {
16     HOD hod("Dr. Rao", "Arts");
17
18     cout << "HOD of " << hod.department << " is " << hod.name << endl;
19     return 0;
20 }
```

Output

HOD of Arts is Dr. Rao

==== Code Execution Successful ===

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main.cpp

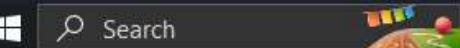
Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class TeacherAdvice {
5 public:
6     string teacher_name;
7     string advice;
8
9     TeacherAdvice(string t, string a) {
10         teacher_name = t;
11         advice = a;
12     }
13 }
14
15 int main() {
16     TeacherAdvice ta("Mr. Sharma", "Always be curious");
17
18     cout << ta.teacher_name << " says: " << ta.advice << endl;
19     return 0;
20 }
```

Output

Mr. Sharma says: Always be curious

==== Code Execution Successful ===

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main.cpp

Run Output Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class Mobile {
5 public:
6     string brand;
7     int battery_life;
8
9     Mobile(string b, int life) {
10         brand = b;
11         battery_life = life;
12     }
13 }
14
15 int main() {
16     Mobile m("Samsung", 12);
17
18     cout << m.brand << " lasts " << m.battery_life << " hours." << endl;
19     return 0;
20 }
```

Samsung lasts 12 hours.

==== Code Execution Successful ===

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class SchoolFriend {
5 public:
6     string friend_name;
7
8     SchoolFriend(string name) {
9         friend_name = name;
10    }
11
12    void greet() {
13        cout << "Hi, " << friend_name << "!" << endl;
14    }
15 }
16
17 int main() {
18
19     SchoolFriend f1("Meera");
20     SchoolFriend f2("Anjali");
21
22     f1.greet();
23     f2.greet();
24     return 0;
25 }
```

Output

```
Hi, Meera!
Hi, Anjali!

*** Code Execution Successful ***
```

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main.cpp Run Output Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class SchoolClass {
5 public:
6     string class_name;
7     string teacher_name;
8
9     SchoolClass(string cname, string tname) {
10         class_name = cname;
11         teacher_name = tname;
12     }
13
14     void info() {
15         cout << class_name << ", Teacher: " << teacher_name << endl;
16     }
17 }
18
19 int main() {
20     SchoolClass sc("Class 10A", "Ms. Smith");
21
22     sc.info();
23
24 }
```

Class 10A, Teacher: Ms. Smith
--- Code Execution Successful ---

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main.cpp

Run

Output

Don't forget Science Exhibition in 2018
--- Code Execution Successful ---

```
1 #include <iostream>
2 using namespace std;
3
4 class SchoolEvent {
5 public:
6     string event_name;
7     int year;
8
9     SchoolEvent(string e, int y) {
10         event_name = e;
11         year = y;
12     }
13
14     void remind() {
15         cout << "Don't forget " << event_name << " in " << year;
16     }
17 }
18
19 int main() {
20     SchoolEvent event("Science Exhibition", 2018);
21     event.remind();
22     return 0;
23 }
```

Search

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main.cpp

```
1 #include <iostream>
2 using namespace std;
3
4 class Student {
5 public:
6     string name;
7     int marks;
8
9     Student(string n, int m) {
10         name = n;
11         marks = m;
12     }
13
14     void display_marks() {
15         cout << name << " scored " << marks << " marks";
16     }
17 }
18
19 int main() {
20     Student s("Shruthi", 88);
21     s.display_marks();
22     return 0;
23 }
```

Output

```
Shruthi scored 88 marks
== Code Execution Successful ==
```

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main.cpp Run Output Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class Student {
5 private:
6     int age;
7 public:
8     void set_age(int a) {
9         age = a;
10    }
11
12    int get_age() {
13        return age;
14    }
15 };
16
17 int main() {
18     Student s;
19     s.set_age(15);
20     cout << "Shruthi's age is " << s.get_age() << endl;
21     return 0;
22 }
```

Shruthi's age is 15

--- Code Execution Successful ---

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main.cpp

```
1 #include <iostream>
2 using namespace std;
3
4 class SchoolFriend {
5 private:
6     string phone_number;
7 public:
8     string name;
9
10    void set_phone(string ph) {
11        phone_number = ph;
12    }
13
14    string get_phone() {
15        return phone_number;
16    }
17 };
18
19 int main() {
20     SchoolFriend f;
21     f.name = "Meera";
22     f.set_phone("9876543210");
23     cout << f.name << " phone number is " << f.get_phone();
24     return 0;
25 }
```

Run Output Clear

Meera phone number is 9876543210
*** Code Execution Successful ***

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class ClassTeacher {
5 private:
6     int salary;
7 public:
8     string name;
9
10    void set_salary(int s) {
11        salary = s;
12    }
13
14    int get_salary() {
15        return salary;
16    }
17 };
18
19 int main() {
20     ClassTeacher t;
21     t.name = "Ms. Smith";
22     t.set_salary(50000);
23     cout << t.name << "'s salary is " << t.get_salary();
24     return 0;
25 }
```

Output

```
Ms. Smith's salary is 50000
*** Code Execution Successful ***
```

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Very high UV ENG 13:25

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class School {
5 private:
6     int funds;
7 public:
8     string name;
9
10    void add_funds(int amount) {
11        funds = amount;
12    }
13    void display_funds() {
14        cout << "Total funds of " << name << ":" << funds;
15    }
16 }
17
18 int main() {
19     School s;
20     s.name = "Presentation Convent";
21     s.add_funds(200000);
22     s.display_funds();
23     return 0;
24 }
```

Output

```
Total funds of Presentation Convent: 200000
*** Code Execution Successful ***
```

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main.cpp

```
1 #include <iostream>
2 using namespace std;
3
4 class Animal {
5 public:
6 void sound(){
7     cout << "Some Sound" << endl;
8 }
9 };
10
11 class Dog : public Animal {
12 public:
13     void sound() {
14         cout << "Bark" << endl;
15     }
16 };
17
18
19 class Cat : public Animal {
20 public:
21     void sound() {
22         cout << "Meow" << endl;
23     }
24 };
25
26
27 int main() {
28     Dog d;
29     Cat c;
30     d.sound();
31     c.sound();
32     return 0;
33 }
```

Bark
Meow

==== Code Execution Successful ===

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main.cpp

```
1 #include <iostream>
2 using namespace std;
3
4 class Vehicle {
5 public:
6     void fuel() {
7         cout << "Some fuel" << endl;
8     }
9 };
10
11 class Car : public Vehicle {
12 public:
13     void fuel() {
14         cout << "Petrol" << endl;
15     }
16 };
17
18 class Bike : public Vehicle {
19 public:
20     void fuel() {
21         cout << "Diesel" << endl;
22     }
23 };
24
25
26
27 int main() {
28     Car car;
29     Bike bike;
30     car.fuel();
31     bike.fuel();
32     return 0;
33 }
```

Petrol
Diesel

==== Code Execution Successful ===

Search

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ENG 13:29

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main.cpp

```
1 #include <iostream>
2 using namespace std;
3
4 class Employee {
5 public:
6     void work_hours() {
7         cout << "General work hours" << endl;
8     }
9 };
10
11 class Manager : public Employee {
12 public:
13     void work_hours() {
14         cout << "9-5" << endl;
15     }
16 };
17
18
19 class Intern : public Employee {
20 public:
21     void work_hours() {
22         cout << "10-4" << endl;
23     }
24 };
25
26
27 int main() {
28     Manager m;
29     Intern i;
30     m.work_hours();
31     i.work_hours();
32     return 0;
33 }
```

Run Output

9-5
10-4

==== Code Execution Successful ===

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main.cpp

```
1 #include <iostream>
2 using namespace std;
3
4 class Shape {
5 public:
6     void draw() {
7         cout << "Drawing Shape" << endl;
8     }
9 };
10
11 class Circle :
12 public Shape {
13 public:
14     void draw() {
15         cout << "Drawing Circle" << endl;
16     }
17 };
18
19 class Square :
20 public Shape {
21 public:
22     void draw() {
23         cout << "Drawing Square" << endl;
24     }
25 };
26
27 int main() {
28     Circle c;
29     Square s;
30     c.draw();
31     s.draw();
32     return 0;
33 }
```

Output

```
Drawing Circle
Drawing Square
==== Code Execution Successful ===
```

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main.cpp

```
1 #include <iostream>
2 using namespace std;
3
4 class ShruthiMood {
5 public:
6 virtual void react() {
7     cout << "Shruthi has some mood" << endl;
8 }
9 };
10
11 class HappyMood :
12 public ShruthiMood {
13 public:
14 void react() {
15     cout << "Shruthi is smiling" << endl;
16 }
17 };
18
19 class SadMood :
20 public ShruthiMood {
21 public:
22 void react() {
23     cout << "Shruthi is frowning" << endl;
24 }
```

Run Output

```
Shruthi is smiling
Shruthi is frowning

==== Code Execution Successful ===
```

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main.cpp

```
15     cout << "Shruthi is smiling" << endl;
16 }
17 };
18
19 class SadMood :
20 public ShruthiMood {
21 public:
22 void react() {
23     cout << "Shruthi is frowning" << endl;
24 }
25 };
26
27 int main() {
28     ShruthiMood* mood;
29
30     HappyMood happy;
31     mood = &happy;
32     mood->react();
33
34     SadMood sad;
35     mood = &sad;
36     mood->react();
37
38 }
```

Run

Output

Clear

```
Shruthi is smiling
Shruthi is frowning

==== Code Execution Successful ===
```

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class ShruthiSubject {
5 public:
6     virtual void marks() {
7         cout << "Shruthi has some marks" << endl;
8     }
9 };
10
11 class Maths :
12 public ShruthiSubject {
13 public:
14     void marks() {
15         cout << "Shruthi scored 95 in Maths" << endl;
16     }
17 };
18
19 class Science :
20 public ShruthiSubject {
21 public:
22     void marks() {
23         cout << "Shruthi scored 88 in Science" << endl;
24     }
}
```

Output

```
Shruthi scored 95 in Maths
Shruthi scored 88 in Science

==== Code Execution Successful ===
```

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main.cpp

```
15     cout << "Shruthi scored 95 in Maths" << endl;
16 }
17 };
18
19 class Science :
20 public ShruthiSubject {
21 public:
22 void marks() {
23     cout << "Shruthi scored 88 in Science" << endl;
24 }
25 };
26
27 int main() {
28     ShruthiSubject* subject;
29
30     Maths m;
31     subject = &m;
32     subject->marks();
33
34     Science s;
35     subject = &s;
36     subject->marks();
37     return 0;
38 }
```

Run Share Output Clear

Output

```
Shruthi scored 95 in Maths
Shruthi scored 88 in Science

==== Code Execution Successful ===
```

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main.cpp

Run Output Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class ShruthiActivity {
5 public:
6     virtual void duration() {
7         cout << "Shruthi does some activity";
8     }
9 };
10
11 class Study :
12 public ShruthiActivity {
13 public:
14     void duration() {
15         cout << "Shruthi studies 8 hours\n";
16     }
17 };
18
19 class LazyBored :
20 public ShruthiActivity {
21 public:
22     void duration() {
23         cout << "Shruthi lazy & bored for 16 hours\n";
24     }
}
```

Output

```
Shruthi studies 8 hours
Shruthi lazy & bored for 16 hours

==== Code Execution Successful ===
```

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main.cpp

```
9 };
10
11 class Study {
12 public ShruthiActivity {
13 public:
14 void duration() {
15     cout << "Shruthi studies 8 hours\n";
16 }
17 };
18
19 class LazyBored {
20 public ShruthiActivity {
21 public:
22 void duration() {
23     cout << "Shruthi lazy & bored for 16 hours\n";
24 }
25 };
26
27 int main() {
28     ShruthiActivity * activities[] = { new Study(), new LazyBored() };
29     for (auto a : activities) a->duration();
30     for (auto a : activities) delete a;
31     return 0;
32 }
```

Run Output

```
Shruthi studies 8 hours
Shruthi lazy & bored for 16 hours

*** Code Execution Successful ***
```

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class ShruthiFood {
5 public:
6     virtual void eat() { cout << "Shruthi eats something"; }
7 }
8
9 class Cake :
10 public ShruthiFood {
11 public:
12     void eat() {
13         cout << "Shruthi eats cake happily\n";
14     }
15 }
16
17 class Vegetables :
18 public ShruthiFood {
19 public:
20     void eat() {
21         cout << "Shruthi eats vegetables sadly\n":
```

Output

Shruthi eats cake happily
Shruthi eats vegetables sadly

==== Code Execution Successful ===

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main.cpp

```
10 public ShruthiFood {
11     public:
12         void eat() {
13             cout << "Shruthi eats cake happily\n";
14         }
15     };
16
17 class Vegetables :
18 public ShruthiFood {
19 public:
20     void eat() {
21         cout << "Shruthi eats vegetables sadly\n";
22     }
23 };
24
25 int main() {
26     ShruthiFood* foods[] = { new Cake(), new Vegetables() };
27     for (auto f : foods) f->eat();
28     for (auto f : foods) delete f;
29     return 0;
30 }
```

Run Output Clear

Shruthi eats cake happily
Shruthi eats vegetables sadly

==== Code Execution Successful ===

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Programiz C++ Online Compiler

main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class ShruthiTravel {
5 public:
6     virtual void destination() {
7         cout << "Shruthi wants to travel somewhere" << endl;
8     }
9 }
10
11 class Beach : public ShruthiTravel {
12 public:
13     void destination() {
14         cout << "Shruthi wants to go to the beach" << endl;
15     }
16 }
17
18 class Mountain : public ShruthiTravel {
19 public:
20     void destination() {
21         cout << "Shruthi wants to go to the mountains" << endl;
```

Output

Shruthi wants to go to the beach
Shruthi wants to go to the mountains

==== Code Execution Successful ===

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main.cpp

1/
18 class Mountain : public ShruthiTravel {
19 public:
20 void destination() {
21 cout << "Shruthi wants to go to the mountains" << endl;
22 }
23 };
24
25 int main() {
26 ShruthiTravel* travel;
27
28 Beach b;
29 Mountain m;
30
31 travel = &b;
32 travel->destination();
33
34 travel = &m;
35 travel->destination();
36 return 0;
37 }

Run Output Clear

Shruthi wants to go to the beach
Shruthi wants to go to the mountains
==== Code Execution Successful ===

Search

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Programiz C++ Online Compiler Programiz PRO > Clear

main.cpp

```
1 #include <iostream>
2 #include <string>
3 using namespace std;
4
5 class ShruthiEmotion {
6 public:
7     virtual void react() = 0;
8 };
9
10 class Happy {
11 public ShruthiEmotion {
12 public:
13     void react() {
14         cout << "Shruthi is smiling and laughing." << endl;
15     }
16 };
17
18 class Sad {
19 public ShruthiEmotion {
20 public:
21     void react() {
22         cout << "Shruthi is looking down and feels low." << endl;
23     }
24 };
25
26 class Angry {
27 public ShruthiEmotion {
28 public:
29     void react() {
30         cout << "Shruthi is frowning and muttering." << endl;
31     }
32 };
33
34 class Cry {
35 public ShruthiEmotion {
```

Run Output

Enter Shruthi's emotion (Happy, Sad, Angry, Cry): Happy
Shruthi is smiling and laughing.
==== Code Execution Successful ===

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Programiz C++ Online Compiler Programiz PRO > Clear

main.cpp

```
31 }
32 };
33
34 class Cry {
35 public ShruthiEmotion {
36 public:
37     void react() {
38         cout << "Shruthi is crying with tears." << endl;
39     }
40 };
41
42 int main() {
43     string choice;
44     cout << "Enter Shruthi's emotion (Happy, Sad, Angry, Cry): ";
45     cin >> choice;
46
47     ShruthiEmotion * emotion = nullptr;
48
49     if (choice == "Happy")
50         emotion = new Happy();
51     else if (choice == "Sad")
52         emotion = new Sad();
53     else if (choice == "Angry")
54         emotion = new Angry();
55     else if (choice == "Cry")
56         emotion = new Cry();
57     else {
58         cout << "Invalid emotion!" << endl;
59         return 0;
60     }
61
62     emotion->react();
63     delete emotion;
64     return 0;
65 }
```

Output

```
▲ Enter Shruthi's emotion (Happy, Sad, Angry, Cry): Happy
Shruthi is smiling and laughing.

==== Code Execution Successful ===
```

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main.cpp

Run Clear

```
1 #include <iostream>
2 #include <string>
3 using namespace std;
4
5 class DailyMood {
6 public:
7     virtual void activity() = 0;
8 };
9
10 class MorningMood : public DailyMood {
11 public:
12     void activity() {
13         cout << "Shruthi wakes up happily." << endl;
14     }
15 };
16
17
18 class AfternoonMood : public DailyMood {
19 public:
20     void activity() {
21         cout << "Shruthi is active and energetic." << endl;
22     }
23 };
24
25
26 class EveningMood : public DailyMood {
27 public:
28     void activity() {
29         cout << "Shruthi is feeling tired." << endl;
30     }
31 }
```

Output

Enter time of day (Morning, Afternoon, Evening): Morning
Shruthi wakes up happily.

==== Code Execution Successful ===

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Programiz C++ Online Compiler Programiz PRO >

main.cpp

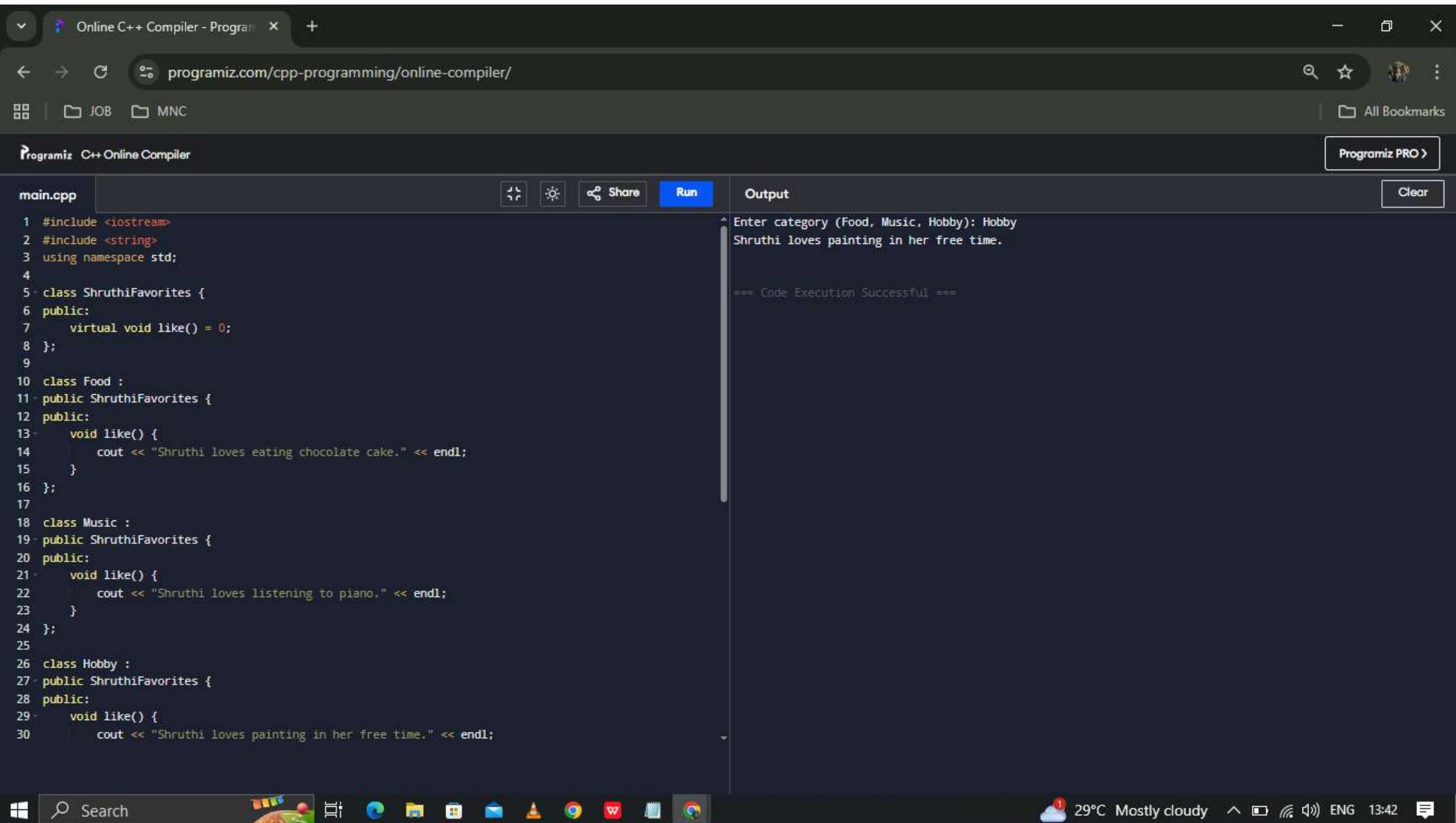
Run Clear

```
26 class EveningMood :  
27 public DailyMood {  
28 public:  
29     void activity() {  
30         cout << "Shruthi is feeling tired." << endl;  
31     }  
32 };  
33  
34 int main() {  
35     string time;  
36     cout << "Enter time of day (Morning, Afternoon, Evening): ";  
37     cin >> time;  
38  
39     DailyMood * mood = nullptr;  
40  
41     if (time == "Morning")  
42         mood = new MorningMood();  
43     else if (time == "Afternoon")  
44         mood = new AfternoonMood();  
45     else if (time == "Evening")  
46         mood = new EveningMood();  
47     else {  
48         cout << "Invalid time of day!" << endl;  
49         return 0;  
50     }  
51  
52     mood->activity();  
53     delete mood;  
54     return 0;  
55 }
```

Output

Enter time of day (Morning, Afternoon, Evening): Morning
Shruthi wakes up happily.
==== Code Execution Successful ===

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main.cpp

Run Clear

```
26 class Hobby :  
27 public ShruthiFavorites {  
28 public:  
29     void like() {  
30         cout << "Shruthi loves painting in her free time." << endl;  
31     }  
32 };  
33  
34 int main() {  
35     string choice;  
36     cout << "Enter category (Food, Music, Hobby): ";  
37     cin >> choice;  
38  
39     ShruthiFavorites* fav = nullptr;  
40  
41     if (choice == "Food")  
42         fav = new Food();  
43     else if (choice == "Music")  
44         fav = new Music();  
45     else if (choice == "Hobby")  
46         fav = new Hobby();  
47     else {  
48         cout << "Invalid category!" << endl;  
49         return 0;  
50     }  
51  
52     fav->like();  
53     delete fav;  
54     return 0;  
55 }
```

Output

Enter category (Food, Music, Hobby): Hobby
Shruthi loves painting in her free time.
*** Code Execution Successful ***



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main.cpp

Run Clear

```
1 #include <iostream>
2 #include <string>
3 using namespace std;
4
5 class MorningRoutine {
6 public:
7     virtual void wake_up() = 0;
8 };
9
10 class NormalMorning :
11 public MorningRoutine {
12     void wake_up() {
13         cout << "Shruthi wakes up quickly" << endl;
14         cout << "Shruthi starts studying" << endl;
15     }
16 };
17
18 class MigraineMorning :
19 public MorningRoutine {
20     void wake_up() {
21         cout << "Shruthi wakes up slowly" << endl;
22         cout << "Shruthi drinks water gently" << endl;
23         cout << "Shruthi stretches lightly" << endl;
24         cout << "Headache avoided!" << endl;
25     }
26 };
27
28 int main() {
```

Output

```
Enter routine (NormalMorning / MigraineMorning): MigraineMorning
Shruthi wakes up slowly
Shruthi drinks water gently
Shruthi stretches lightly
Headache avoided!

*** Code Execution Successful ***
```

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Clear

main.cpp

```
20 void wake_up() {
21     cout << "Shruthi wakes up slowly" << endl;
22     cout << "Shruthi drinks water gently" << endl;
23     cout << "Shruthi stretches lightly" << endl;
24     cout << "Headache avoided!" << endl;
25 }
26 };
27
28 int main() {
29     string choice;
30     cout << "Enter routine (NormalMorning / MigraineMorning): ";
31     cin >> choice;
32
33     MorningRoutine * routine = nullptr;
34
35     if (choice == "NormalMorning")
36         routine = new NormalMorning();
37     else if (choice == "MigraineMorning")
38         routine = new MigraineMorning();
39     else {
40         cout << "Invalid choice!" << endl;
41         return 0;
42     }
43
44     routine->wake_up();
45     delete routine;
46
47 }
```

Run

Output

```
* Enter routine (NormalMorning / MigraineMorning): MigraineMorning
Shruthi wakes up slowly
Shruthi drinks water gently
Shruthi stretches lightly
Headache avoided!

*** Code Execution Successful ***
```

Search

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ENG 13:44

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main.cpp

Run Clear

```
1 #include <iostream>
2 #include <string>
3 using namespace std;
4
5 class JobWorry {
6 public:
7     void worry(string reason) {
8         cout << "Shruthi is worried about " << reason << endl;
9     }
10
11     void worry(string reason, int hours) {
12         cout << "Shruthi is worried about " << reason
13             << " for " << hours << " hours straight" << endl;
14     }
15 };
16
17 int main() {
18     JobWorry jw;
19     jw.worry("no job yet");
20     jw.worry("no job yet", 5);
21     return 0;
22 }
```

Output

```
Shruthi is worried about no job yet
Shruthi is worried about no job yet for 5 hours straight

*** Code Execution Successful ***
```

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class DailyRoutine {
5 public:
6     void schedule(string activity) {
7         cout << "Shruthi is " << activity << " today" << endl;
8     }
9
10    void schedule(string activity, int hours) {
11        cout << "Shruthi spends " << hours << " hours "
12            << activity << endl;
13    }
14 };
15
16 int main() {
17     DailyRoutine dr;
18     dr.schedule("looking for jobs");
19     dr.schedule("searching for jobs", 3);
20     return 0;
21 }
```

Output

Shruthi is looking for jobs today
Shruthi spends 3 hours searching for jobs

==== Code Execution Successful ===

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main.cpp

Run Output Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class Secret {
5 public:
6     void share() {
7         cout << "Shruthi keeps her biggest secret private" << endl;
8     }
9     void share(string hint) {
10        cout << "Shruthi hints: " << hint << endl;
11    }
12 };
13
14 int main() {
15     Secret s;
16     s.share();
17     s.share("Something about college");
18     return 0;
19 }
```

Shruthi keeps her biggest secret private
Shruthi hints: Something about college

==== Code Execution Successful ===

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class LifeMistake {
5 public:
6     void reflect() {
7         cout << "Shruthi thinks about her biggest mistake in life" <<
8             endl;
9     }
10    void reflect(string reason) {
11        cout << "Shruthi regrets " << reason << " as her biggest
12            mistake" << endl;
13    }
14 int main() {
15     LifeMistake m;
16     m.reflect();
17     m.reflect("Procrastination");
18     return 0;
19 }
```

Output

```
Shruthi thinks about her biggest mistake in life
Shruthi regrets Procrastination as her biggest mistake

==== Code Execution Successful ===
```

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class LifeMistake {
5 public:
6     void reflect() {
7         cout << "Shruthi thinks about her biggest mistake in life" <<
8             endl;
9     }
10    void reflect(string reason) {
11        cout << "Shruthi regrets " << reason << " as her biggest
12            mistake" << endl;
13    }
14 int main() {
15     LifeMistake m;
16     m.reflect();
17     m.reflect("Procrastination");
18     return 0;
19 }
```

Output

```
Shruthi thinks about her biggest mistake in life
Shruthi regrets Procrastination as her biggest mistake

==== Code Execution Successful ===
```

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main.cpp

```
1 #include <iostream>
2 using namespace std;
3
4 class LifeWithout {
5 public:
6     void feel() {
7         cout << "Shruthi feels lonely and sad" << endl;
8     }
9
10    void feel(string person) {
11        if(person == "Darshan") {
12            cout << "Shruthi will be a full mental without her handsome bro." << endl;
13        } else {
14            cout << "Shruthi feels sad without " << person << endl;
15        }
16    }
17 };
18
19 int main() {
20     LifeWithout l;
21
22     l.feel();
23     l.feel("Darshan");
24     return 0;
25 }
```

Run

Output

Clear

```
Shruthi feels lonely and sad
Shruthi will be a full mental without her handsome bro.

*** Code Execution Successful ***
```

Search

28°C Mostly sunny

ENG 13:52

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main.cpp

```
1 #include <iostream>
2 using namespace std;
3
4 class Allergy {
5 public:
6     virtual void reaction() {
7         cout << "Shruthi must be careful of allergies" << endl;
8     }
9 };
10
11 class MaidaAllergy : public Allergy {
12 public:
13     void reaction() override {
14         cout << "Shruthi becomes like a lizard" << endl;
15     }
16 };
17
18 class GodhumaiAllergy : public Allergy {
19 public:
20     void reaction() override {
21         cout << "Shruthi gets stomach pain after eating godhumai" << endl;
22     }
23 };
24
25 class ArivuAllergy : public Allergy {
26 public:
27     void reaction() override {
28         cout << "Shruthi feels sleepy when using too much brain (arivu)" << endl;
29     }
30 };
31
32 class PadipuAllergy : public Allergy {
33 public:
34     void reaction() override {
35         cout << "Shruthi avoids to use brain and be dumb" << endl;
36     }
37 };
38
39 int main() {
40     MaidaAllergy m;
41     GodhumaiAllergy g;
42     ArivuAllergy a;
43     PadipuAllergy p;
44
45     cout << "Shruthi becomes like a lizard" << endl;
46     cout << "Shruthi gets stomach pain after eating godhumai" << endl;
47     cout << "Shruthi feels sleepy when using too much brain (arivu)" << endl;
48     cout << "Shruthi avoids to use brain and be dumb" << endl;
49
50     cout << "--- Code Execution Successful ---" << endl;
51 }
```

Output

```
Shruthi becomes like a lizard
Shruthi gets stomach pain after eating godhumai
Shruthi feels sleepy when using too much brain (arivu)
Shruthi avoids to use brain and be dumb

--- Code Execution Successful ---
```

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main.cpp

```
25 class ArivuAllergy :  
26 public Allergy {  
27     void reaction() override {  
28         cout << "Shruthi feels sleepy when using too much brain (arivu)" << endl;  
29     }  
30 };  
31 class PadipuAllergy :  
32 public Allergy {  
33     void reaction() override {  
34         cout << "Shruthi avoids to use brain and be dumb" << endl;  
35     }  
36 };  
37  
38 int main() {  
39     Allergy * allergy;  
40  
41     MaidaAllergy maida;  
42     GodhumaiAllergy godhumai;  
43     ArivuAllergy arivu;  
44     PadipuAllergy padipu;  
45  
46     allergy = &maida;  
47     allergy->reaction();  
48  
49     allergy = &godhumai;  
50     allergy->reaction();  
51  
52     allergy = &arivu;  
53     allergy->reaction();  
54  
55     allergy = &padipu;  
56     allergy->reaction();  
57     return 0;  
58 }  
59 }
```

Output

```
▲ Shruthi becomes like a lizard  
Shruthi gets stomach pain after eating godhumai  
Shruthi feels sleepy when using too much brain (arivu)  
Shruthi avoids to use brain and be dumb  
  
*** Code Execution Successful ***
```

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main.cpp

Run Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class Tour {
5 public:
6     virtual void experience() {
7         cout << "Shruthi enjoys traveling" << endl;
8     }
9 };
10
11 class BeachTour : public Tour {
12 public:
13     void experience() override {
14         cout << "Shruthi builds sandcastles and enjoys the sea" << endl;
15     }
16 };
17
18 class HillTour : public Tour {
19 public:
20     void experience() override {
21         cout << "Shruthi hikes and takes photos of mountains" << endl;
22     }
23 }
```

Output

Shruthi enjoys traveling
Shruthi builds sandcastles and enjoys the sea
Shruthi hikes and takes photos of mountains

==== Code Execution Successful ===

Search

Industrial output growth... ENG 13:58

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main.cpp

21 cout << "Shruthi hikes and takes photos of mountains" << endl;
22 }
23 };
24
25 int main() {
26 Tour* tour;
27
28 Tour general;
29 BeachTour beach;
30 HillTour hill;
31
32 tour = &general;
33 tour->experience();
34
35 tour = &beach;
36 tour->experience();
37
38 tour = &hill;
39 tour->experience();
40 return 0;
41 }

Run Share Output Clear

Output

Shruthi enjoys traveling
Shruthi builds sandcastles and enjoys the sea
Shruthi hikes and takes photos of mountains

==== Code Execution Successful ===

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main.cpp Run Output Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class IndustrialVisit {
5 public:
6     virtual void experience() {
7         cout << "Shruthi attends the industrial visit" << endl;
8     }
9 };
10
11 class FirstIV :
12 public IndustrialVisit {
13     void experience() override {
14         cout << "Shruthi visits the Computer Science department and learns about software development." << endl;
15     }
16 };
17
18 class SecondIV :
19 public IndustrialVisit {
20     void experience() override {
21         cout << "Shruthi visits the Electronics department and explores circuits and robots." << endl;
22     }
}
```

Shruthi attends the industrial visit
Shruthi visits the Computer Science department and learns about software development.
Shruthi visits the Electronics department and explores circuits and robots.

==== Code Execution Successful ===

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main.cpp

```
19 public IndustrialVisit {  
20     void experience() override {  
21         cout << "Shruthi visits the Electronics department and explores circuits  
22         and robots." << endl;  
23     }  
24  
25 int main() {  
26     IndustrialVisit * iv;  
27  
28     IndustrialVisit general;  
29     FirstIV first;  
30     SecondIV second;  
31  
32     iv = &general;  
33     iv->experience();  
34  
35     iv = &first;  
36     iv->experience();  
37  
38     iv = &second;  
39     iv->experience();  
40     return 0;  
41 }
```

Run Share Output Clear

Output

```
Shruthi attends the industrial visit  
Shruthi visits the Computer Science department and learns about software development.  
Shruthi visits the Electronics department and explores circuits and robots.  
  
==== Code Execution Successful ===
```

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main.cpp Run Output Clear

```
1 #include <iostream>
2 using namespace std;
3
4 class FinalYearProject {
5 public:
6     virtual void review() {
7         cout << "Shruthi completes her final year project" << endl;
8     }
9 };
10
11 class BestProject : public FinalYearProject {
12 public:
13     void review() {
14         cout << "Shruthi's project receives top marks for innovation" << endl;
15     }
16 };
17
18 class WorstProject : public FinalYearProject {
19 public:
20     void review() {
21         cout << "Shruthi struggles with coding errors and gets low marks" << endl
22         ;
23 }
```

Shruthi completes her final year project
Shruthi's project receives top marks for innovation
Shruthi struggles with coding errors and gets low marks

==== Code Execution Successful ===

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main.cpp

```
19 public FinalYearProject {  
20     void review() {  
21         cout << "Shruthi struggles with coding errors and gets low marks" << endl  
22     }  
23 };  
24  
25 int main() {  
26     FinalYearProject * project;  
27  
28     FinalYearProject general;  
29     BestProject best;  
30     WorstProject worst;  
31  
32     project = &general;  
33     project->review();  
34  
35     project = &best;  
36     project->review();  
37  
38     project = &worst;  
39     project->review();  
40     return 0;  
41 }
```

Run Share Output Clear

Output

```
Shruthi completes her final year project  
Shruthi's project receives top marks for innovation  
Shruthi struggles with coding errors and gets low marks  
  
==== Code Execution Successful ===
```

Search High winds soon ENG 14:00