CMPSC 112

Lecture 6: Multiple Inheritance & Polymorphism

Dr. Aravind Mohan

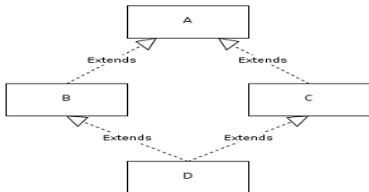Allegheny College

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Last Time

- Inheritance
- How to access Variables (Private, Public, and Protected)

  Reminder: Mastery Quiz.

Multiple Inheritance

- Multiple Inheritance is a feature of object oriented concept, where a class can inherit properties of more than one parent class.
- Is it supported in Java?
- Diamond Problem Ambiguity

What is Polymorphism?

- Definition: Polymorphism is ability of an object to appear and behave differently for the same invocation. ex: each car gives difference mileage (when you drive it)

Why Polymorphism?

- Enables "programming in the general"
- The same invocation can produce "many forms" of results

Polymorphism Case 1

- Method Overloading: The notion of having two or more methods in the same class with the same name but different arguments.

```
void foo(int a);
void foo(int a, float b);
```

Polymorphism Case 2

- Method Overriding: Multiple methods with same arguments, but different implementations.
- Parent and child class implementation.

```
class Parent {
    void foo(double d) {
        // do something
    }
}
class Child extends Parent {
    @Override
    void foo(double d){
        // this method is overridden.
    }
}
```

Any Questions

- Reminder 01: REVIEW FORM
- Reminder 02: Midterm 1 Exam in two weeks. (October 3rd)