Course Name - Object Oriented Programming using Java

Lecture 20: super and final keywords, super() method

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Topic of Interest

- Super Keyword
- Super() method
- Super() with parameter
- Final Keyword
- Final keyword used before Variable
- Final keyword used before method
- Final keyword used before class

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Super Keyword

In case of method overriding we can access parent method rather than same method of child with the help of child class object.

```
class A{
    void abc(){
    System.out.println("Hello");}}
class B extends A{
  void abc(){
    System.out.println("Hi");}
void pqr(){
    System.out.println("Thank You");}
void work(){
super.abc();
abc();
pqr();
}  }
public class Test2{
public static void main(String args[])
{  B obj=new B();
obj.work();
}}
```

OUTPUT:
Hello
Hi
Thank You

Super() method

Super() method can execute super or parent class constructor where this method exists.

```
class A{
A()
{System.out.println("A is created");
}
            }
class D extends A{
D(){
//super();
System.out.println("D is created");
}
}
class Test{
public static void main(String args[])
{
D d=new D();
}
}
```

OUTPUT:
A is created
D is created

Super() with parameter

```
class Person
{
int id;
String name;
Person(int id, String name){
this.id=id;
this.name=name;
}  }
Class Emp extends Person
{
float salary;
Emp(int id,String name,float salary)
{
```

```
super(id,name);//reusing parent constructor
this.salary=salary;
}
void display()
{System.out.println(id+" "+name+" "+salary);
} }
class Test{
public static void main(String[] args)
{
Emp e1=new Emp(11,"Sunil",64000f);
e1.display();
}
}
```

OUTPUT:

11 Sunil 64000

Final Keyword

The final keyword in java is used to restrict the user.

1. It can stop value change when it is used before variable.
2. It can stop method overriding when it is used before method.
3. It can stop inheritance when it is used before class.

Final keyword used before Variable

```
class Cycle{
final int speed=30;//final variable
                void run()
{               speed=30;
                                        }
                public static void main(String
args[])
{
                                Cycle obj=new
Cycle();
                                obj.run();
                                }
}//end of class
```

Output -

```
Cycle.java:4: error: cannot assign a value to
final variable speed
{       speed=30;
        ^
1 error
```

We are going to change the value of this variable, but It can't be changed because final variable once assigned a value can never be changed.

Final keyword used before method

```
class Cycle{
final void move()
{
System.out.println("running");
}
 }
class Hero extends Cycle{
void move()
{
System.out.println("Moving with two wheel");}
public static void main(String args[])
{  Hero obj= new Hero();
obj.move();
   }
 }
```

Output -

```
Hero.java:8: error: move() in Hero cannot
override move() in Cycle
void move()
     ^
  overridden method is final
1 error
```

When we are going to assign final keyword before a method of parent class it can't be overridden into the child class.

Final keyword used before class

```
final class Cycle{
void run(){
System.out.println("run”);
}
}
class hero extends Cycle{
void run()
{System.out.println("Running");
}
 public static void main(String args[])
{  hero obj= new hero();
obj.run();
                }
}
```

Output -

```
hero.java:6: error: cannot inherit from final
Cycle
class hero extends Cycle{
                   ^
1 error
```

When we are going to assign final keyword before a class name it can’t be inherited means no child class will be created of that particular parent class.

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