

Java Chapter 11: Keywords and Object-Oriented Concepts

1. Java Keywords Magic Words in Java

Keywords are special reserved words in Java that have a fixed meaning and cannot be used as names for variables, classes, or methods.

Key Points:

- There are 50+ keywords in Java.
- They are case-sensitive (class Class).
- Cannot be used as identifiers.

Common Keywords:

int - Declares a number variable (e.g., int age = 10;)

class - Declares a class (e.g., class Student {})

void - No return value (e.g., void show() {})

if, else - Conditional branching

for, while - Loops

return - Returns a value

new - Creates new objects

this - Refers to the current object

2. Method Overloading

Method Overloading means creating multiple methods with the same name but different parameters.

Example:

```
class Greet {  
    void sayHello() {  
        System.out.println("Hello!");  
    }  
    void sayHello(String name) {  
        System.out.println("Hello, " + name);  
    }  
}
```

Java Chapter 11: Keywords and Object-Oriented Concepts

```
}
```

3. Inheritance

Inheritance means a class can inherit features from another class (parent-child relationship).

Example:

```
class Animal {  
    void sound() {  
        System.out.println("Animal sound");  
    }  
}  
  
class Dog extends Animal {  
    void bark() {  
        System.out.println("Dog barks");  
    }  
}
```

4. Static Keyword

The static keyword is used to define variables or methods that belong to the class, not objects.

Example:

```
class Example {  
    static int count = 0;  
}
```

5. this Keyword

The 'this' keyword refers to the current object of the class.

Example:

Java Chapter 11: Keywords and Object-Oriented Concepts

```
class Student {  
    String name;  
    Student(String name) {  
        this.name = name;  
    }  
}
```

Exercises - MCQs

1. What is a keyword?
 - a) A class
 - b) A special reserved word
 - c) A loop
 - d) An error
2. Can we use keywords as variable names?
 - a) Yes
 - b) No
3. Which keyword is used to create an object?
 - a) class
 - b) new
4. What is the use of this?
 - a) Refers to current object

Fill in the Blanks

1. Java keywords are _____ words. (reserved)
2. We use '_____' to define a class. (class)
3. The keyword '_____' creates a new object. (new)
4. '_____' keyword belongs to the class, not object. (static)

Java Chapter 11: Keywords and Object-Oriented Concepts

5. '_____' keyword refers to the current object. (this)

True or False

1. We can use keywords as variable names. (False)
2. 'static' methods can be called without object. (True)
3. 'this' refers to the class. (False)
4. Inheritance is when a class takes features of another. (True)
5. 'int' is a keyword. (True)

Coding Tasks

1. Create a class Car with a static variable that counts how many objects were created.
2. Write a program showing method overloading for greeting people.
3. Create two classes Animal and Dog. Use inheritance and call both methods.
4. Create a class Rectangle with 'this' keyword and show area calculation.