Java Modifiers

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Modifiers

By now, you are quite familiar with the `public` keyword that appears in almost all of our examples:

```
public class Main
```

The `public` keyword is an **access modifier**, meaning that it is used to set the access level for classes, attributes, methods and constructors.

We divide modifiers into two groups:

- **Access Modifiers** - controls the access level
- **Non-Access Modifiers** - do not control access level, but provides other functionality

Access Modifiers

For **classes**, you can use either `public` or *default*:

Modifier	Description	Try it
`public`	The class is accessible by any other class	Try it »
default	The class is only accessible by classes in the same package. This is used when you don't specify a modifier. You will learn more about packages in the Packages chapter	Try it »

For **attributes, methods and constructors**, you can use the one of the following:

Modifier	Description	Try it
`public`	The code is accessible for all classes	Try it »
`private`	The code is only accessible within the declared class	Try it »
default	The code is only accessible in the same package. This is used when you don't specify a modifier. You will learn more about packages in the Packages chapter	Try it »
`protected`	The code is accessible in the same package and **subclasses**. You will learn more about subclasses and superclasses in the Inheritance chapter	Try it »

Public vs. Private Example

In the example below, the class has one `public` attribute and one `private` attribute.

Think of it like real life:

- `public` - a public park, everyone can enter
- `private` - your house key, only you can use it

Example

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```
class Person {
  public String name = "John";    // Public - accessible everywhere
  private int age = 30;          // Private - only accessible inside
}

public class Main {
  public static void main(String[] args) {
    Person p = new Person();
    System.out.println(p.name);    // Works fine
    System.out.println(p.age);     // Error: age has private access i
  }
}
```

Try it Yourself »

Example explained

Here, `name` is declared as `public`, so it can be accessed from outside the `Person` class. But `age` is declared as `private`, so it can only be used inside the `Person` class.

Exercise

?

Fill in the correct access modifier so that x is accessible from all classes.

```
public class Main {
              int x = 5;
}
```

private public protected default

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