Software Academy

Back-end development: Java

TECH TALENT ACADEMY

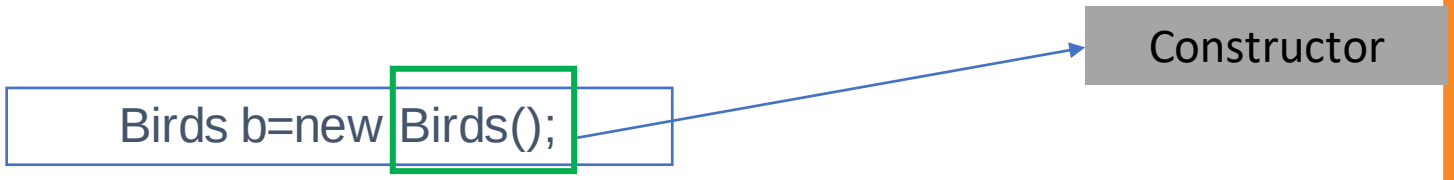
Session Objective

TTA

Identifying the Building Blocks of a Java Program(Contd..)

Object: it is a class type variable

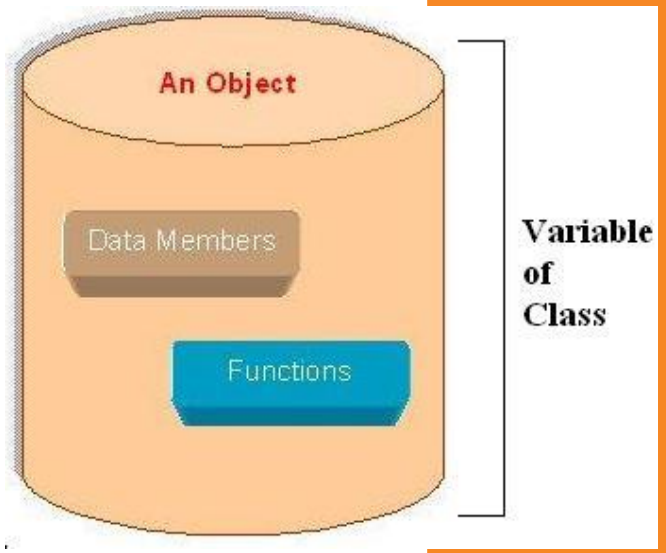
- To allocate memory to the object, you need to initialize the object by using the **new** operator.




```
classname objectname;        \\ declaration of object.
objectname = new classname();
 \\ allocate memory to object (define object).
```

or we can directly define object like this

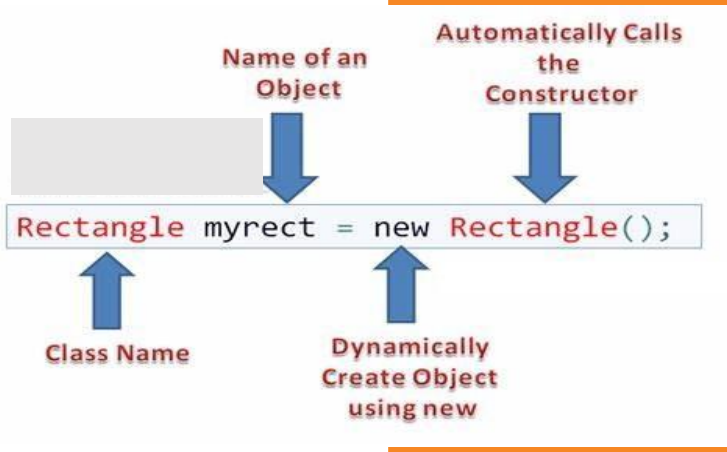
```
classname objectname = new classname();
```

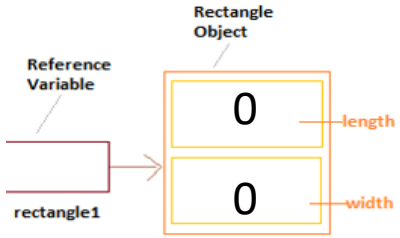


Identifying the Building Blocks of a Java Program(Contd..)

```
class Rectangle
{
Int length;
Int width ;
}
```

How to create object of Rectangle class





Identifying the Building Blocks of a Java Program(Contd..)

- 2 ways to initialize (assign values to class variables):
- Using Methods
- Using Constructor

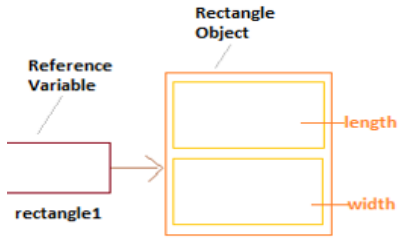
Identifying the Building Blocks of a Java Program(Contd..)

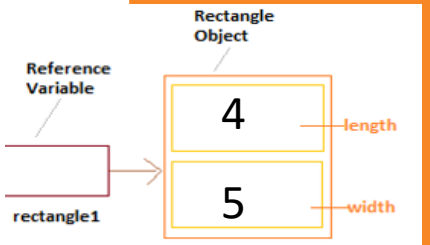
```
class Rectangle {
    int length ;
    int width ;
  public void set(int l, int w)
  {
     length = l ;
     width = w;
  }
  public void display()
  {
     System.out.println(length*width);
  }
  public static void main(String[] args) {
  Rectangle myrect = new Rectangle();
  myrect.set(4, 5);
  myrect.display();
  }
}
```

Method calling

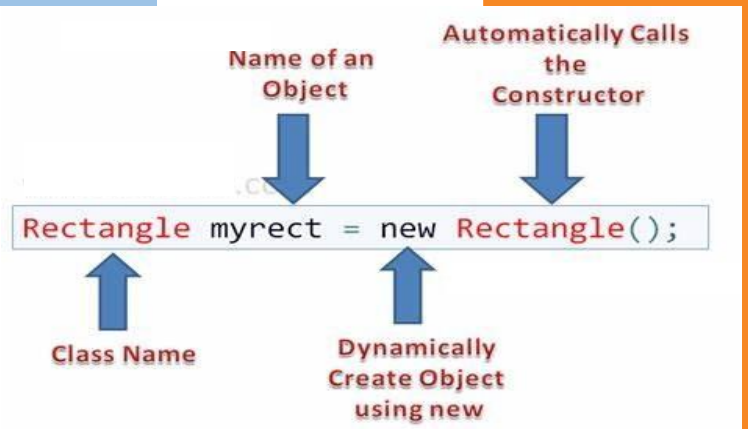
20

Object initialization using "**Method**"



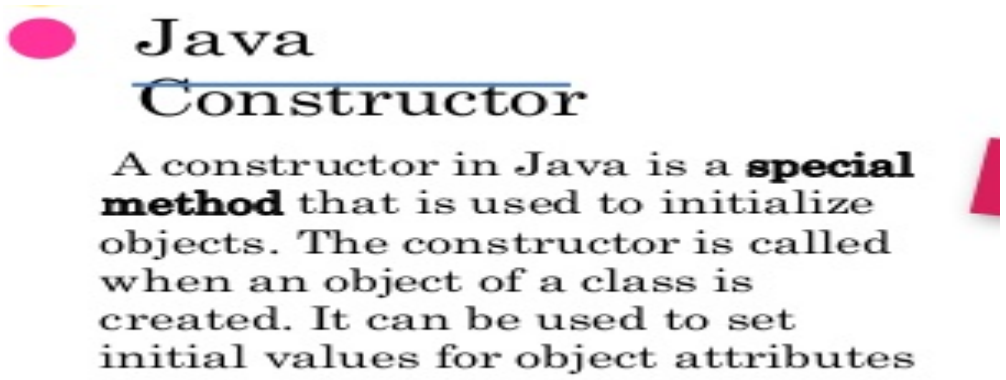


Create Object



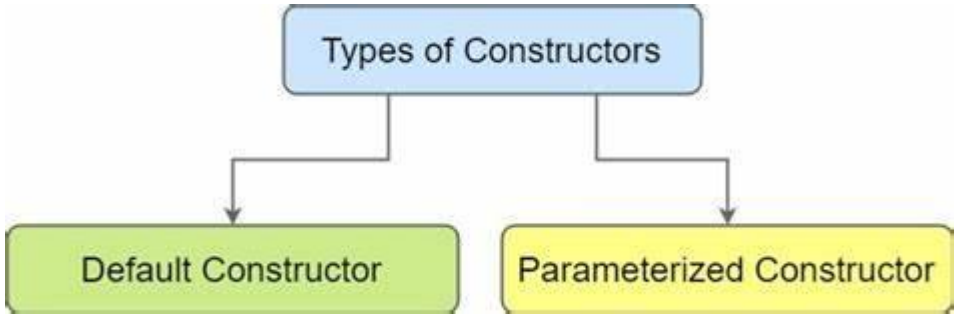
Identifying the Building Blocks of a Java Program(Contd..)

What is constructor



In object-oriented languages, when you create an object of a class, **special methods known as constructors are called automatically**

Identifying the Building Blocks of a Java Program(Contd..)



Identifying the Building Blocks of a Java Program(Contd..)

Default Constructor

- If there is no constructor in a class, compiler automatically creates a default constructor.
- **What is the Purpose of Default Constructor?**
  - Default constructor provides the default values to the object like 0, null etc. depending on the type.

```
class Rectangle
{
Int length;
Int width ;
}
```

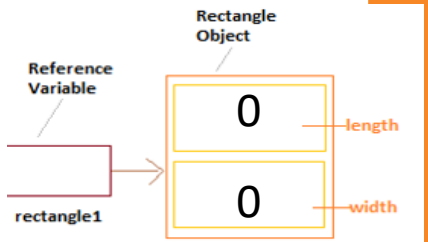
```
class Rectangle
{

}
```

Rectangle.java

Compiler

```
class Rectangle
{
    Rectangle(){}
}
```

Rectangle.class



Identifying the Building Blocks of a Java Program(Contd..)

Constructor in Java

- **Java Parameterized Constructor**
- A constructor that have parameters is known as parameterized constructor.
- **Why use Parameterized Constructor?**
  - Parameterized constructor is used to provide different values to the distinct objects.
- **Syntax of Parameterized Constructor**

```
class_name(parameter_list)
{
}
```

- **Example**

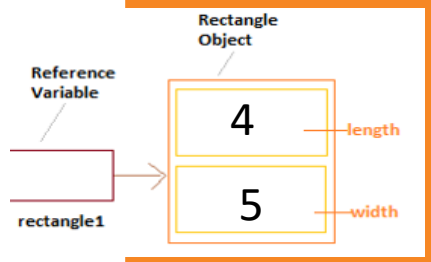
```
Rectangle (int len , int bre)
{
}
```

Identifying the Building Blocks of a Java Program(Contd..)

```
class Rectangle {
    int length ;
    int width ;
    public  Rectangle(int l, int w)
    {
       length = l ;
       width = w;
    }
    public void display()
    {
       System.out.println(length*width);
    }
    public static void main(String[] args) {

Rectangle myrect = new Rectangle(4,5);

        myrect.display();
    }

}
```

Object initialization using **Constructor"**

calling "**Constructor" with parameter 4 and 5**



Difference between Constructor and Method

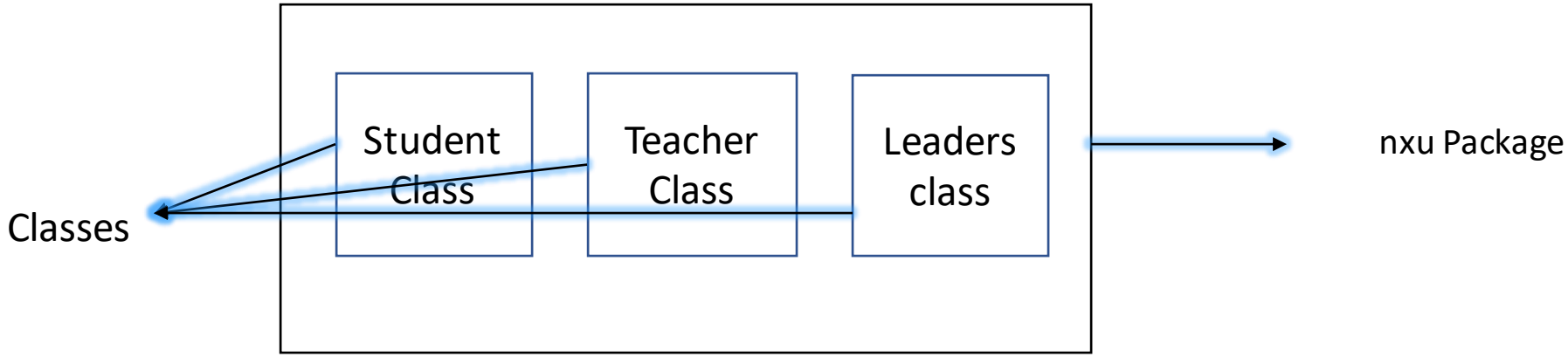
Difference Between Constructor and Method

Java Constructor	Java Method
Constructor is used to initialize the state of an object.	Method is used to expose behaviour of an object.
Constructor must not have return type.	Method must have return type.
Constructor is invoked implicitly.	Method is invoked explicitly.
The java compiler provides a default constructor if you don't have any constructor.	Method is not provided by compiler in any case.
Constructor name must be same as the class name.	Method name may or may not be same as class name.

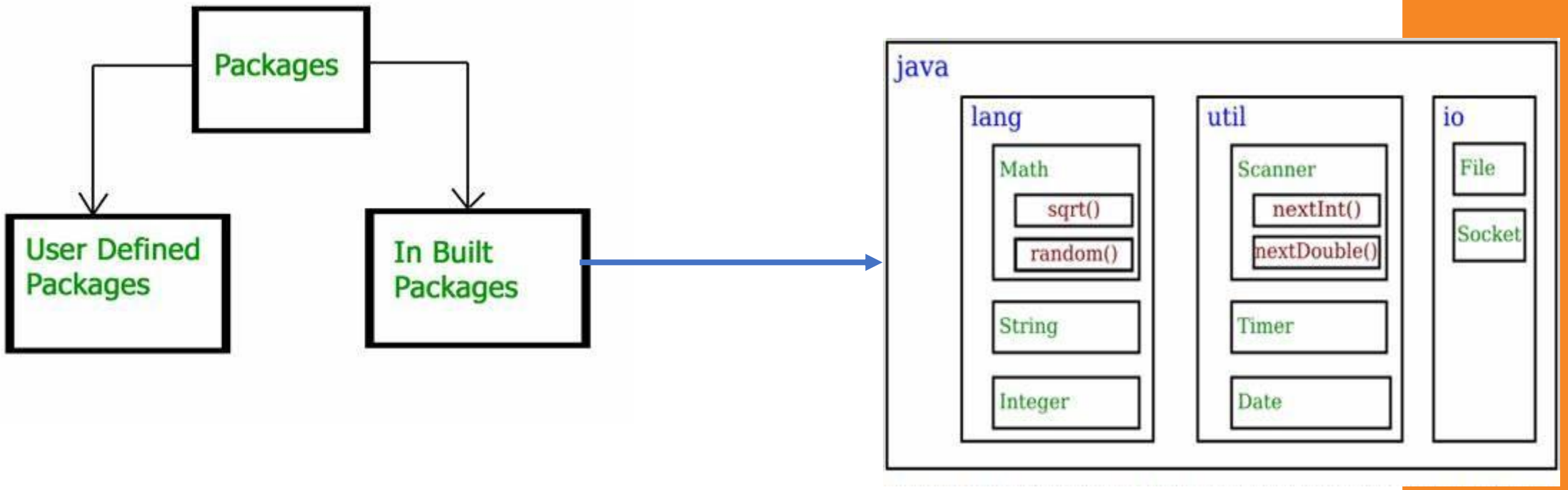
Package in java

- **A package(FOLDER)(DIRECTORY):**
  - Is a collection of classes.
  - It is used to group the related classes together.
- The following syntax is used to define a package:

```
Example: package nxu;
```



Identifying the Building Blocks of a Java Program(Contd..)

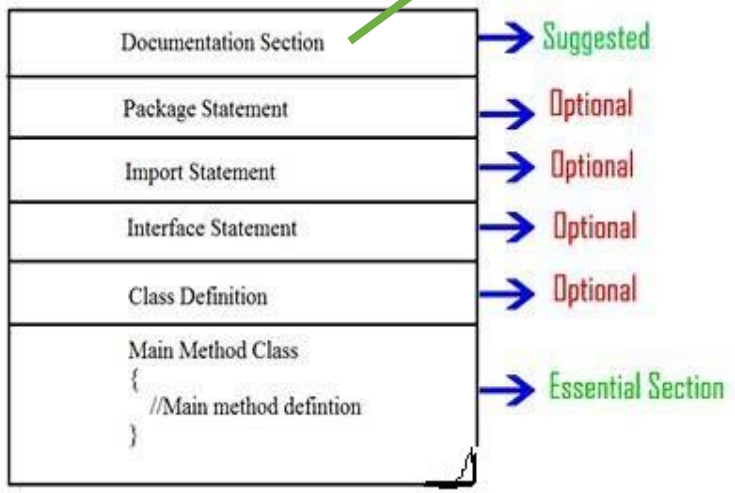


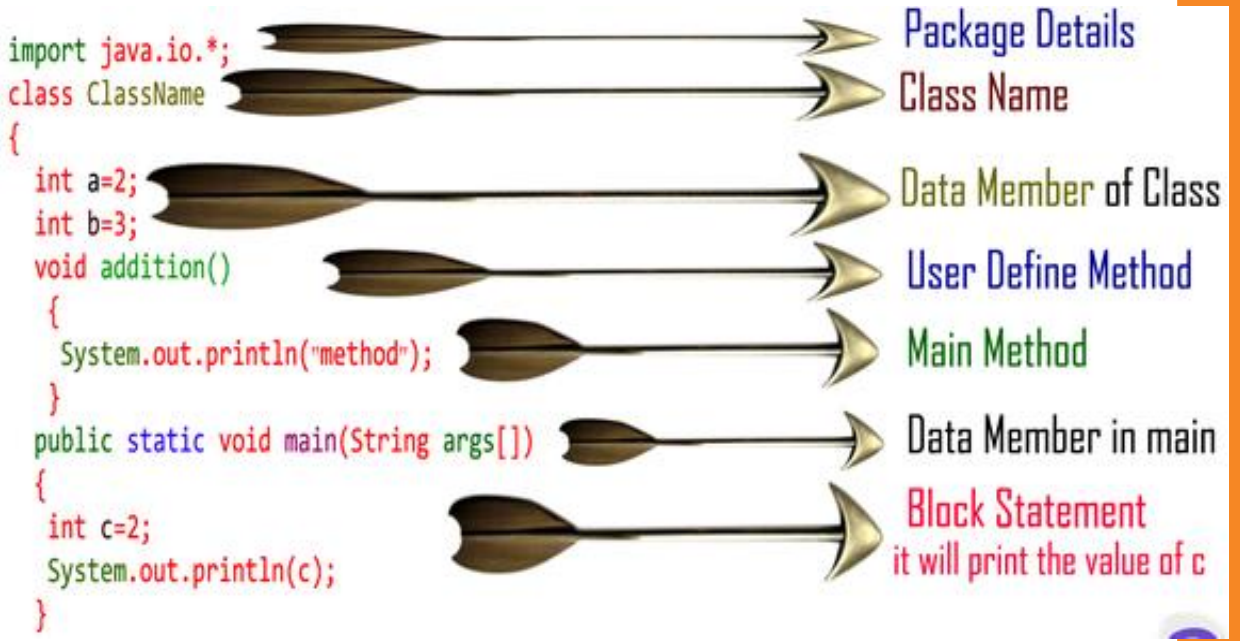
Package names are in small case like java.lang, java.util, java.io

JAVA PROGRAM STRUCTURE

Comments:- To describe the code, comments are not read by the complier. 2 types

1. **Single line comments (//)**
2. **Multi line comments (/* */)**





Just-a-Minute

1. Each operating system (OS) needs to have its own JVM to interpret and run bytecode. Identify the command that executes the JVM to run the bytecodes.

a. Java
b. Javac
c. Javaw
d. Javadoc

Answer: a. java

2. Which statements related to JAVA are true?

i. Java has a feature called as Garbage Collection to automatically deallocating memory
ii. Java is not platform independent
iii. Java is an Object Oriented Programming Language
iv. Java is not secure

a. i and ii
b. i, ii and iii
c. i and iii
d. All are true

Answer: c. i and iii

Just-a-Minute

1.Which one of the following options is the correct extension of a Java source file?

a. .jav
b. .java
c. .JAVA
d. .class

Answer: b . . java

2. Identify the correct syntax of declaring a class in a Java program.

a. class 123MyClass
b. public class MyClass 123
c. class break
d. public class FinalClass

Answer: d. public class FinalClass

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