Advanced Java Programming

> ⚠️ Only for java developers who are familiar with java basics and intermediate concepts.

Which version of java to use ?

- Open JDK 11 [Recommended]
- Use Java 9 or later
- Use LTS version of java

Earlier it was paid for commericial use but now oracle JDK is again free.

Generics

generics are way to tell the compiler what type of objects a collection can contain. They are represented inside angular brackets.

```
// example of array list with generics
List<String> names = new ArrayList();
names.add("khaby");
String name = names.get(0);   //no need to cast or convert to string
```

With generics you can restrict which types of objects a collection stores.

names2.add(7) will give an error as array is of type string .

use generic methods to avoid run time errors . Generic methods in java are method that allow you to create a new type parameter just for that method.

```
//this method takes same type of list as it returns.
public static <T> List<T> nameofmethod(T[] , List<T> list){
    return list;
}
```

Var Args

varargs or variable arguments in java allow you to use variable numbers of arguements. you can use var args instead of array as parameter . To do so you need to put three dots after data type in parameter as:

```
private static void nameOfMethod( String... multipleArgs){

}
```

Wildcards

A wildcard is essentially an unknown type , gives more functionality when writting methods.

The question mark (?) is known as the wildcard in generic programming . It represents an unknown type. The wildcard can be used in a variety of situations such as the type of a parameter, field, or local variable; sometimes as a return type. Unlike arrays, different instantiations of a generic type are not compatible with each other, not even explicitly. This incompatibility may be softened by the wildcard if ? is used as an actual type parameter.

```
public static void add(List<? extends Number> list)
```