# The Java API

Introduction to OO Programming

## The Java API

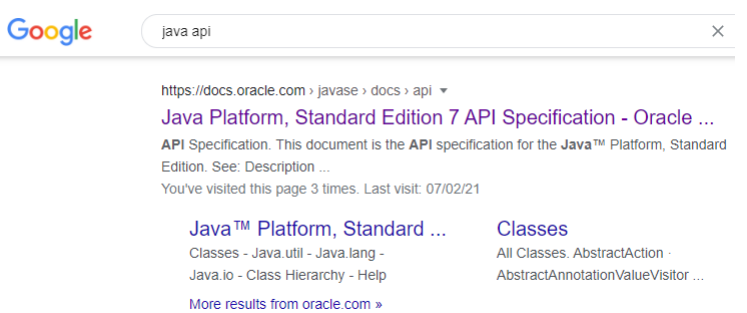
- The Java Application Programming Interface (API)
- The Java API documents the classes available in the Java library.
  - Like an instruction manual
- This includes the provision of information on the ***methods*** and ***instance variables*** of each class.

# The Java API

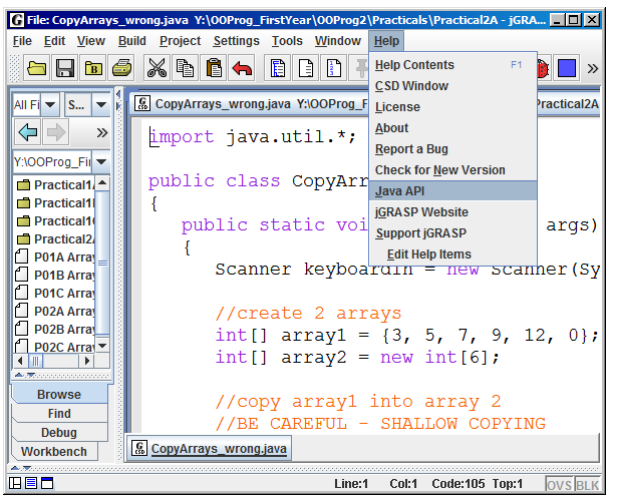
- The Application Programming Interface (API) is a collection of prewritten packages, classes, and interfaces with their respective ***methods***, ***fields*** and ***constructors***.
- In Java, most basic programming tasks are performed using the API's classes and packages,
  - Code reuse
  - Minimising the number of lines of code to be written.
- Learning to navigate the API is a skill

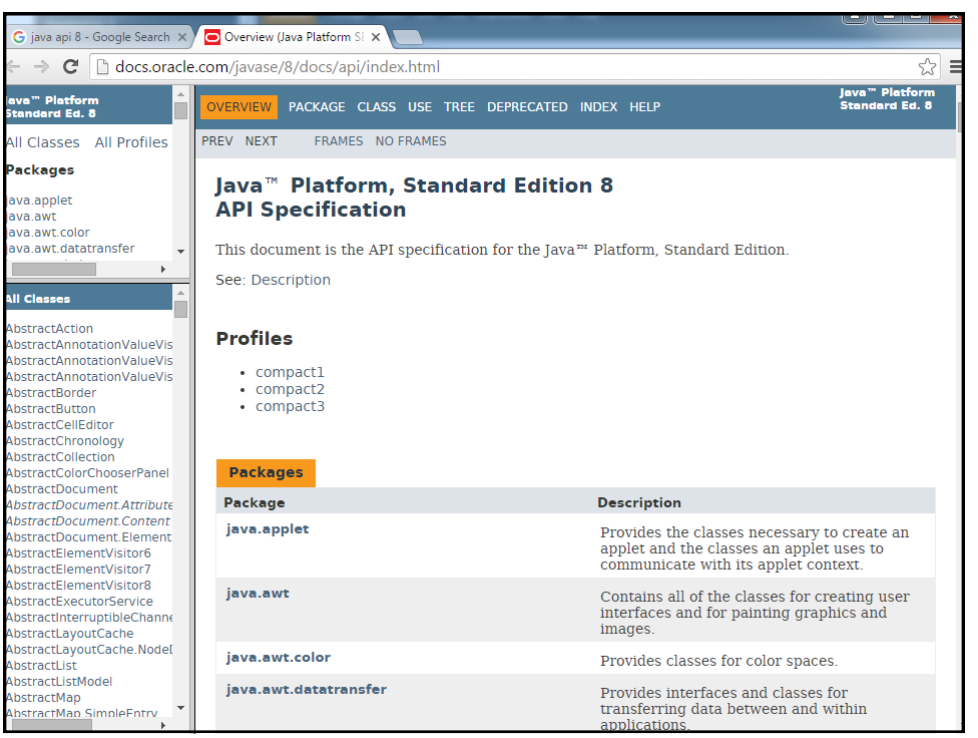
# The Java API

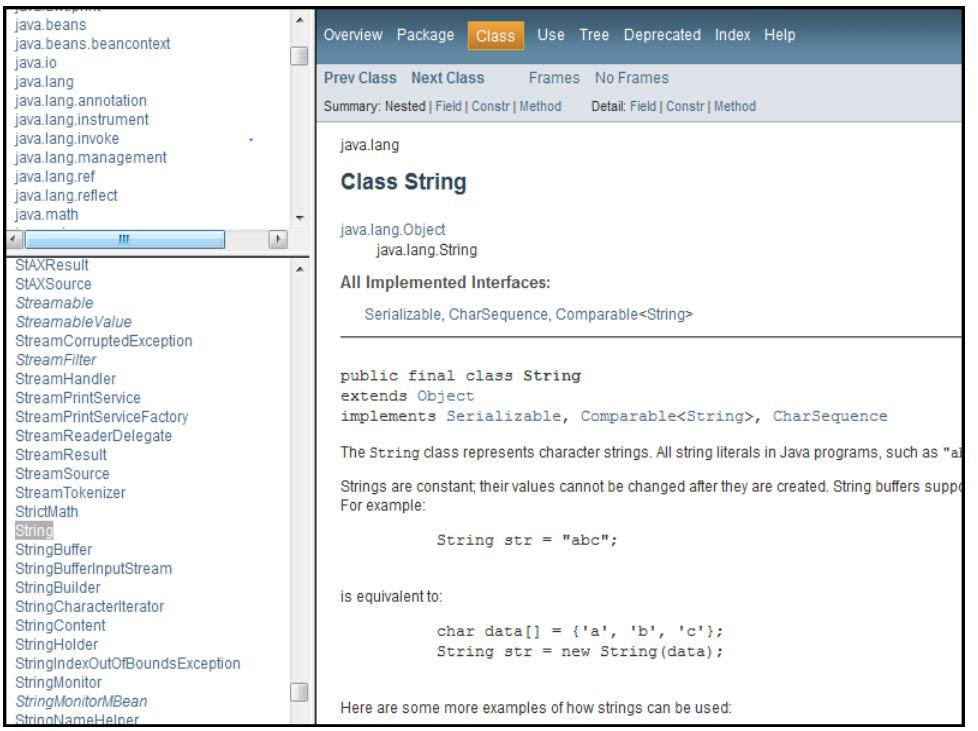
Search the web for Java API for the latest documentation



# Access the Java API from jGrasp Help




java.beans
java.beans.beancontext
java.io
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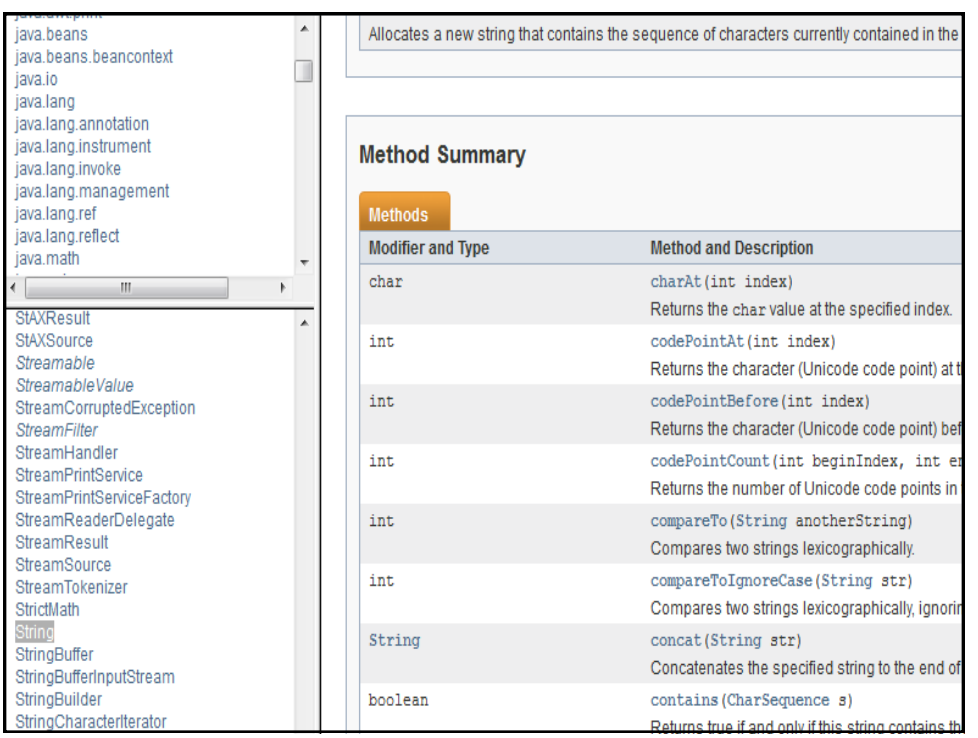
Streamable
StreamableValue
StreamCorruptedException
StreamFilter
StreamHandler
StreamPrintService
StreamPrintServiceFactory
StreamReaderDelegate
StreamResult
StreamSource
StreamTokenizer
StrictMath
String
StringBuffer
StringBufferInputStream
StringBuilder
StringCharacterIterator
StringContent
StringHolder
StringIndexOutOfBoundsException
StringMonitor
StringMonitorMBean
Overview Package Class Use Tree Deprecated Index Help
Prev Class Next Class Frames No Frames
Summary: Nested | Field | Constr | Method Detail: Field | Constr | Method
java.lang
Class String
java.lang.Object
java.lang.String
All Implemented Interfaces:
Serializable, CharSequence, Comparable<String>
public final class String
extends Object
implements Serializable, Comparable<String>, CharSequence
The String class represents character strings. All string literals in Java programs, such as "a
Strings are constant; their values cannot be changed after they are created. String buffers suppo
For example:
String str = "abc";
is equivalent to:
char data[] = {'a', 'b', 'c'};
String str = new String(data);
Here are some more examples of how strings can be used: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StAXResult
StAXSource
Streamable
StreamableValue
StreamCorruptedException
StreamFilter
StreamHandler
StreamPrintService
StreamPrintServiceFactory
StreamReaderDelegate
StreamResult
StreamSource
StreamTokenizer
StrictMath
String
StringBuffer
StringBufferInputStream
StringBuilder
StringCharacterIterator
Allocates a new string that contains the sequence of characters currently contained in the
Method Summary
Methods
Modifier and Type
Method and Description
char
charAt(int index)
Returns the char value at the specified index.
int
codePointAt(int index)
Returns the character (Unicode code point) at t
int
codePointBefore(int index)
Returns the character (Unicode code point) bef
int
codePointCount(int beginIndex, int e
Returns the number of Unicode code points in
int
compareTo(String anotherString)
Compares two strings lexicographically.
int
compareToIgnoreCase(String str)
Compares two strings lexicographically, ignorin
String
concat(String str)
Concatenates the specified string to the end of
boolean
contains(CharSequence s)
Returns true if and only if this string contains th

# Using the Java API

**Problem:**

How do I find the first character in a particular String?

```
String name = new String();
name = "Katie Taylor";
```

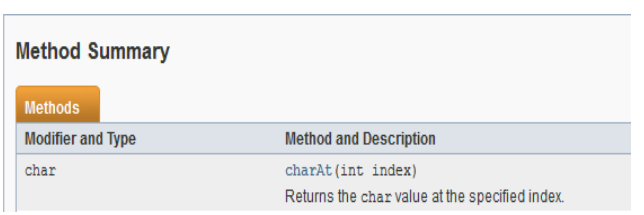
**Step 1:**

Find the `String` class in the Java API

# Using the Java API

**Step 2:**

Read through the Method Summary section to find the method which will retrieve a particular character.



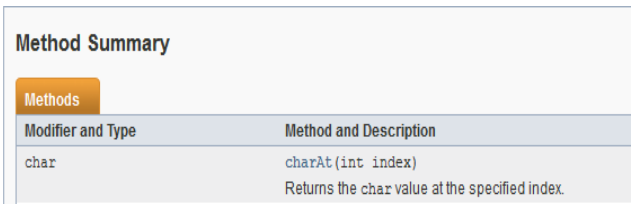
Method Summary

Methods

| Modifier and Type | Method and Description |
|---|---|
| char | charAt(int index)<br>Returns the char value at the specified index. |

# Using the Java API

**Step 3:**
Figure out how to use the method by identifying its **input parameter type** and **return type**



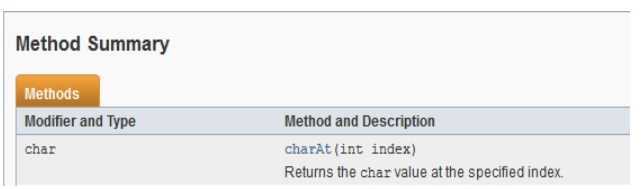
**Method Summary**

Methods

| Modifier and Type | Method and Description |
|---|---|
| char | charAt(int index)<br>Returns the char value at the specified index. |

# Using the Java API

**Step 4:**
Based on these, write code to call the method, and deal with any returned values



**Method Summary**

Methods

| Modifier and Type | Method and Description |
|---|---|
| char | charAt(int index)<br>Returns the char value at the specified index. |

```
char firstLetter;
firstLetter = name.charAt(0);
System.out.println(firstLetter);
```

```
import java.util.Scanner;
public class StringTester{

   public static void main(String [] args)
   {
   // declare variables
   Scanner keyboardIn = new Scanner(System.in);
   String userName = new String();
   int noOfLetters = 0;
   char letter;

   // get user name from the user
   System.out.print("Please enter your user name: ");
   userName = keyboardIn.nextLine();

   // use an appropriate method to find the number of letters
   noOfLetters = userName.length();

   // use an appropriate method to find the first letter
   letter = userName.charAt(0);

   System.out.println(username +" has " + noOfLetters + " characters"
   System.out.println(" and starts with the letter " + letter);
   }
}
```