With Java 8, Base64 has finally got its due. Java 8 now has inbuilt encoder and decoder for Base64 encoding. In Java 8, we can use three types of Base64 encoding −

* **Simple** − Output is mapped to a set of characters lying in **A-Za-z0-9+/**. The encoder does not add any line feed in output, and the decoder rejects any character other than A-Za-z0-9+/.
* **URL** − Output is mapped to set of characters lying in **A-Za-z0-9+\_**. Output is URL and filename safe.
* **MIME** − Output is mapped to MIME friendly format. Output is represented in lines of no more than 76 characters each, and uses a carriage return '\r' followed by a linefeed '\n' as the line separator. No line separator is present to the end of the encoded output.

Nested Classes

|  |  |
| --- | --- |
| **S. No.** | **Nested class & Description** |
| 1 | **static class Base64.Decoder**  This class implements a decoder for decoding byte data using the Base64 encoding scheme as specified in RFC 4648 and RFC 2045. |
| 2 | **static class Base64.Encoder**  This class implements an encoder for encoding byte data using the Base64 encoding scheme as specified in RFC 4648 and RFC 2045. |

Methods

|  |  |
| --- | --- |
| **S. No.** | **Method Name & Description** |
| 1 | **static Base64.Decoder getDecoder()**  Returns a Base64.Decoder that decodes using the Basic type base64 encoding scheme. |
| 2 | **static Base64.Encoder getEncoder()**  Returns a Base64.Encoder that encodes using the Basic type base64 encoding scheme. |
| 3 | **static Base64.Decoder getMimeDecoder()**  Returns a Base64.Decoder that decodes using the MIME type base64 decoding scheme. |
| 4 | **static Base64.Encoder getMimeEncoder()**  Returns a Base64.Encoder that encodes using the MIME type base64 encoding scheme. |
| 5 | **static Base64.Encoder getMimeEncoder(int lineLength, byte[] lineSeparator)**  Returns a Base64.Encoder that encodes using the MIME type base64 encoding scheme with specified line length and line separators. |
| 6 | **static Base64.Decoder getUrlDecoder()**  Returns a Base64.Decoder that decodes using the URL and Filename safe type base64 encoding scheme. |
| 7 | **static Base64.Encoder getUrlEncoder()**  Returns a Base64.Encoder that encodes using the URL and Filename safe type base64 encoding scheme. |

Methods Inherited

Base64 class inherits few methods from the **java.lang.Object** class.

Base64 Example

Let us see an example to see Base64 in practice −

Java8Tester.java

import java.util.Base64;

import java.util.UUID;

import java.io.UnsupportedEncodingException;

public class HelloWorld {

public static void main(String args[]){

try {

// Encode using basic encoder

String base64encodedString = Base64.getEncoder().encodeToString("TutorialsPoint?java8".getBytes("utf-8"));

System.out.println("Base64 Encoded String (Basic) :" + base64encodedString);

// Decode

byte[] base64decodedBytes = Base64.getDecoder().decode(base64encodedString);

System.out.println("Original String: " + new String(base64decodedBytes, "utf-8"));

base64encodedString = Base64.getUrlEncoder().encodeToString("TutorialsPoint?java8".getBytes("utf-8"));

System.out.println("Base64 Encoded String (URL) :" + base64encodedString);

StringBuilder stringBuilder = new StringBuilder();

for (int i = 0; i < 10; ++i) {

stringBuilder.append(UUID.randomUUID().toString());

}

byte[] mimeBytes = stringBuilder.toString().getBytes("utf-8");

String mimeEncodedString = Base64.getMimeEncoder().encodeToString(mimeBytes);

System.out.println("Base64 Encoded String (MIME) :" + mimeEncodedString);

}catch(UnsupportedEncodingException e){

System.out.println("Error :" + e.getMessage());

}

}

}

Verify the Result

Compile the class using **javac** compiler as follows −

$javac Java8Tester.java

Now run the Java8Tester as follows −

$java Java8Tester

It should produce the following output −

Base64 Encoded String (Basic) :VHV0b3JpYWxzUG9pbnQ/amF2YTg=

Original String: TutorialsPoint?java8

Base64 Encoded String (URL) :VHV0b3JpYWxzUG9pbnQ\_amF2YTg=

Base64 Encoded String (MIME) :ZWJjY2YzZWUtYmUwZC00Yjg1LTlkYjUtNWUyMzBlNWI

4ZGQ4ZjE1NGJmMjEtNTdkNi00YzM1LTg4

MzYtNDZlYzNhZDM2NTdkZmQzY2RiNzMtMTU1OC00ZjBmLWFmZGQtM2YyZWU3MDYzZjQwNzVhY

WQ0

ODctZWEyZS00YzM2LWEyZmUtOGVkMmNjMGNmZGM3MTg5YWUyZGQtMzg4MS00M2NkLWI2NDEtZ

jNh

Zjk2OGIxZDU2YzkzODZlYTUtNjljNC00ZmIyLTkzYTQtMzVlOTFlNjdlY2E0MDcwNWExMWItM

mE4

Yy00OTljLTg2NmItMjE3ZTZmMmIyY2NiNzI2MjAwZWQtMjI0NC00YzJhLWJiMGItOTczMDJkM

zIx

NGFkY2QyZmVhODItNmUyOS00MWNjLWFlODItNzdmNzRhYmQ4NGU5ZGQ3ZjY3NzktZjgwYi00M

zlk

LTlmNDgtOTNlNTIwYzIzZDcy