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Java MD5 example

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Java ... verview

MD5 (... gest algorithm 5) is a widely used cryptographic hash function with a 128-bit hash value, specified in RFC ... 5 is one in a series of message digest algorithms designed by Professor Ronald Rivest of MIT (Rivest ... 05 has been employed in a wide variety of security applications, and is also worldwide used to check ... of files.

MD5 is ... olution for security thinking. The Java developers usually may take over or code MD5 encryption, the MD ... n is complicated, for self-coding it's hard to implement. Java standard edition has MD5 support built in. in p... va.security , class MessageDigest supports functionality of a message digest algorithm, such as MD...

1. Ex... to Hash a String with MD5 algorithm

This is a Java MD5 example, it passes into a string and returns the MD5 encryption value, we used the method getBytes() that converts a plain text to byte array, the digest is then updated from the bytes from the byte array and a hash computation is conducted upon them(using MessageDigest).

MD5.java

```
1   import java.io.FileInputStream;
2   import java.io.UnsupportedEncodingException;
3   import java.math.BigInteger;
4   import java.security.MessageDigest;
5   import java.security.NoSuchAlgorithmException;
6
7   public class MD5 {
```

Categories

```java
 8      public static String getMD5(String input) {
 9          try {
10              MessageDigest md = MessageDigest.getInstance("MD5");
11              byte[] messageDigest = md.digest(input.getBytes());
12              BigInteger number = new BigInteger(1, messageDigest);
13              String hashtext = number.toString(16);
14              // Now we need to zero pad it if you actually want the full 32 chars.
15              while (hashtext.length() < 32) {
16                  hashtext = "0" + hashtext;
17              }
18              return hashtext;
19          }
20          catch (NoSuchAlgorithmException e) {
21              throw new RuntimeException(e);
22          }
23      }
24
25      public static void main(String[] args) throws NoSuchAlgorithmException {
26          System.out.println(getMD5("Javarmi.com"));
27      }
28  }
```

Java MD5 example Output:

> 0127f712fc008f857e77a2f3f179c710

2. Another way Hashing String with MD5 algorithm

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This is another Java MD5 encryption example, it accepts string and returns MD5 encryption value.

```java
1  import java.io.FileInputStream;
2  import java.io.UnsupportedEncodingException;
3  import java.math.BigInteger;
4  import java.security.MessageDigest;
5  import java.security.NoSuchAlgorithmException;
6
7  public class MD5 {
8      public static String getMD5(String input) {
9          byte[] source;
```

```java
        try {
            //Get byte according by specified coding.
            source = input.getBytes("UTF-8");
        } catch (UnsupportedEncodingException e) {
            source = input.getBytes();
        }
        String result = null;
        char hexDigits[] = {'0', '1', '2', '3', '4', '5', '6', '7',
                '8', '9', 'a', 'b', 'c', 'd', 'e', 'f'};
        try {
            MessageDigest md = MessageDigest.getInstance("MD5");
            md.update(source);
            //The result should be one 128 integer
            byte temp[] = md.digest();
            char str[] = new char[16 * 2];
            int k = 0;
            for (int i = 0; i < 16; i++) {
                byte byte0 = temp[i];
                str[k++] = hexDigits[byte0 >>> 4 & 0xf];
                str[k++] = hexDigits[byte0 & 0xf];
            }
            result = new String(str);
        } catch (Exception e) {
            e.printStackTrace();
        }
        return result;
    }

    public static void main(String[] args) throws NoSuchAlgorithmException {
        System.out.println(getMD5("Javarmi.com"));
    }
}
```

Java MD5 example Output

```
0127f712fc008f857e77a2f3f179c710
```

3. File checksum using Java MD5

MD5 algorithm is also widely used for file checksum to ensure that files were not modified by attacker, an example is below that uses Java MD5 hashing algorithm to generate a checksum for file "c:\\apache\\cxf.jar". you can check whether the printed value matches the original MD5 value which was released by Jar Publisher.

```java
public static void main(String[] args) throws Exception {
    MessageDigest md = MessageDigest.getInstance("MD5");
    FileInputStream fis = new FileInputStream("c:\\apache\\cxf.jar");
```

```
 4
 5        byte[] dataBytes = new byte[1024];
 6
 7        int nread = 0;
 8        while ((nread = fis.read(dataBytes)) != -1) {
 9            md.update(dataBytes, 0, nread);
10        };
11        byte[] mdbytes = md.digest();
12        StringBuffer sb = new StringBuffer();
13        for (int i = 0; i < mdbytes.length; i++) {
14            sb.append(Integer.toString((mdbytes[i] & 0xff) + 0x100, 16).substring(1));
15        }
16        System.out.println("Digest(in hex format):: " + sb.toString());
17    }
```

Reference

http://download.oracle.com/javase/1.4.2/docs/api/java/security/MessageDigest.html

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3 THOUGHTS ON "JAVA MD5 EXAMPLE"

MD5 Example on September 26, 2010 at 8:35 am said:

Thanks your Java MD5 checksum. I am happy Java support MessageDigest to help to implement MD5 checksum.

Reply↓

Viraf Karai on January 1, 2013 at 9:25 pm said:

I feel that instead of writing all this code, it is preferable to use Apache Commons Codec and write very little code such as:
~~~~~~

final String stringForMD5 = "Mary had a little lamb, its fleece was white as snow";

final String md5Hex = DigestUtils.md5Hex (stringForMD5);

final String result = String.format("MD5 for %s is %s %n", stringForMD5, md5Hex);

System.out.println (result);

Reply↓

admin
on January 2, 2013 at 12:42 pm said:

You are right, Apache Codec is an alternative approach to implement MD5, but we have to import the 3th library to have this feature included, In Java, we actually don't need write much code as well, just a little code lines…

Reply↓

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