```
    Console.WriteLine("Message 2 hash = " +
Convert.ToBase64String(md5hashedMessage2));

    Console.ReadLine();
}
```

Code Listing 4

Secure Hash Algorithm (SHA) Family

The SHA family is a family of cryptographic hash functions published by the National Institute of Standards and Technology (NIST).

The SHA family covers some different variants, including:

- **SHA-1**: A 160-bit hash function which resembles the earlier MD5 algorithm. This was designed by the National Security Agency to be part of the Digital Signature Algorithm. Cryptographic weaknesses were discovered in SHA-1 and the standard was no longer approved for most cryptographic uses after 2010.
- **SHA-2**: A family of two similar hash functions with different block sizes known as SHA-256 and SHA-512. They differ in the word size: SHA-256 uses 32-bit words whereas SHA-512 uses 64-bit words. These versions of the SHA algorithm were also designed by the NSA.
- **SHA-3**: A hash function formerly called Keccak, chosen in 2012 after a public competition among non-NSA designers. It supports the same hash lengths as SHA-2 and its internal structure differs significantly from the rest of the SHA family. SHA-3 is not currently supported in the .NET framework directly, although third-party implementations are available.

Implementing SHA in your applications is a very straightforward process as the signatures of the SHA objects are identical to those of the MD5 objects.

```
public class HashData
{
    public static byte[] ComputeHashSHA1(byte[] toBeHashed)
    {
        using (var sha1 = SHA1.Create())
        {
            return sha1.ComputeHash(toBeHashed);
        }
    }

    public static byte[] ComputeHashSHA256(byte[] toBeHashed)
    {
        using (var sha256 = SHA256.Create())
        {
            return sha256.ComputeHash(toBeHashed);
        }
    }
```