System.Net

URI：Uniform Resource Identifier，统一资源标识符

URL：Uniform Resource Locator，统一资源定位符

URI的简化通用形式为：

Protocol://HostName/FilePath?Query

Protocol：指定使用的协议，如HTTP

HostName：标识特定服务器，如[www.HerbSchildt.com](http://www.HerbSchildt.com)

FilePath：指定特定文件的路径，如果没有指定，获取HostName的默认页面

Query：指定要发送给服务器的信息

例：程序internet\_test1

// Copyright 2016.刘珅珅

// author：刘珅珅

// HTTP协议

using System;

using System.Collections.Generic;

using System.IO;

using System.Linq;

using System.Net;

using System.Text;

using System.Threading.Tasks;

namespace internet\_test1

{

class HttpTest

{

static void Main(string[] args)

{

// 创建internet请求

HttpWebRequest request = (HttpWebRequest)WebRequest.Create("http://www.163.com");

// 创建internet响应

HttpWebResponse response = (HttpWebResponse)request.GetResponse();

// 从响应中提取输入

Stream stream = response.GetResponseStream();

for (int i = 1; ; ++i)

{

int ch = stream.ReadByte();

if (ch == -1) break;

Console.Write((char) ch);

if ((i % 400) == 0)

{

Console.Write("\nPress Enter.");

Console.ReadLine();

}

}

response.Close();

}

}

}

处理网络错误

为了处理程序可能生成的网络异常，必须监控对Create()、GetResponse()和GetResponseStream()方法的调用。

例：程序internet\_test2

// Copyright 2016.刘珅珅

// author：刘珅珅

// 处理internet异常

using System;

using System.Collections.Generic;

using System.IO;

using System.Linq;

using System.Net;

using System.Text;

using System.Threading.Tasks;

namespace internet\_test2

{

class HttpTest

{

static void Main(string[] args)

{

try

{

HttpWebRequest request = (HttpWebRequest)WebRequest.Create("http://www.McGraw-Hill.com/moon");

// 创建internet响应

HttpWebResponse response = (HttpWebResponse)request.GetResponse();

// 从响应中提取输入

Stream stream = response.GetResponseStream();

for (int i = 1; ; ++i)

{

int ch = stream.ReadByte();

if (ch == -1) break;

Console.Write((char)ch);

if ((i % 400) == 0)

{

Console.Write("\nPress Enter.");

Console.ReadLine();

}

}

response.Close();

} catch (WebException e)

{

Console.WriteLine("Network Error: " + e.Message + "\nStatus code: " + e.Status);

} catch (ProtocolViolationException e)

{

Console.WriteLine("Protocol Error: " + e.Message);

} catch (UriFormatException e)

{

Console.WriteLine("URI Format Error: " + e.Message);

} catch (NotSupportedException e)

{

Console.WriteLine("Unknown Protocol: " + e.Message);

} catch (IOException e)

{

Console.WriteLine("I/O Error: " + e.Message);

} catch (System.Security.SecurityException e)

{

Console.WriteLine("Security Exception: " + e.Message);

} catch (InvalidOperationException e)

{

Console.WriteLine("Invalid Operation: " + e.Message);

}

}

}

}

在实际编写C#网络程序时，应该处理所有的网络异常。

Uri类：

例：程序internet\_test3

// Copyright 2016.刘珅珅

// author：刘珅珅

// Uri类

using System;

using System.Collections.Generic;

using System.Linq;

using System.Net;

using System.Text;

using System.Threading.Tasks;

namespace internet\_test3

{

class UriTest

{

static void Main(string[] args)

{

// Uri

Uri sample = new Uri("http://HerbSchildt.com/somefile.txt?SomeQuery");

Console.WriteLine("Host: " + sample.Host);

Console.WriteLine("Port " + sample.Port);

Console.WriteLine("Scheme: " + sample.Scheme);

Console.WriteLine("Local Path: " + sample.LocalPath);

Console.WriteLine("Query: " + sample.Query);

}

}

}

输出结果：

Host: herbschildt.com

Port 80

Scheme: http

Local Path: /somefile.txt

Query: ?SomeQuery

访问HTTP响应的附加信息

例：程序internet\_test4

// Copyright 2016.刘珅珅

// author：刘珅珅

// 访问HTTP附加信息

using System;

using System.Collections.Generic;

using System.Linq;

using System.Net;

using System.Text;

using System.Threading.Tasks;

namespace internet\_test4

{

class HttpTest

{

static void Main(string[] args)

{

try

{

HttpWebRequest request = (HttpWebRequest)WebRequest.Create("http://www.McGraw-Hill.com");

// 创建internet响应

HttpWebResponse response = (HttpWebResponse)request.GetResponse();

// 访问报头

string[] names = response.Headers.AllKeys;

Console.WriteLine("{0,-20}{1}\n", "Name", "Value");

foreach (string name in names)

{

Console.Write("{0,-20}", name);

foreach (string value in response.Headers.GetValues(name))

Console.WriteLine(value);

}

response.Close();

}

catch (WebException e)

{

Console.WriteLine("Network Error: " + e.Message + "\nStatus code: " + e.Status);

}

catch (ProtocolViolationException e)

{

Console.WriteLine("Protocol Error: " + e.Message);

}

catch (UriFormatException e)

{

Console.WriteLine("URI Format Error: " + e.Message);

}

catch (NotSupportedException e)

{

Console.WriteLine("Unknown Protocol: " + e.Message);

}

catch (System.Security.SecurityException e)

{

Console.WriteLine("Security Exception: " + e.Message);

}

catch (InvalidOperationException e)

{

Console.WriteLine("Invalid Operation: " + e.Message);

}

}

}

}

使用WebClient下载数据

例：程序internet\_test5

// Copyright 2016.刘珅珅

// author：刘珅珅

// WebClient下载数据

using System;

using System.Collections.Generic;

using System.IO;

using System.Linq;

using System.Net;

using System.Text;

using System.Threading.Tasks;

namespace internet\_test5

{

class WebClientTest

{

static void Main(string[] args)

{

WebClient user = new WebClient();

string uri = "http://www.163.com";

string file\_name = "data.txt";

try

{

Console.WriteLine("Downloading data from " + uri + " to " + file\_name);

user.DownloadFile(uri, file\_name);

} catch (WebException e)

{

Console.WriteLine(e);

}

Console.WriteLine("Download complete");

}

}

}