PDF Vision .Net

(Multi-platform .Net library)

SautinSoft

Linux development manual

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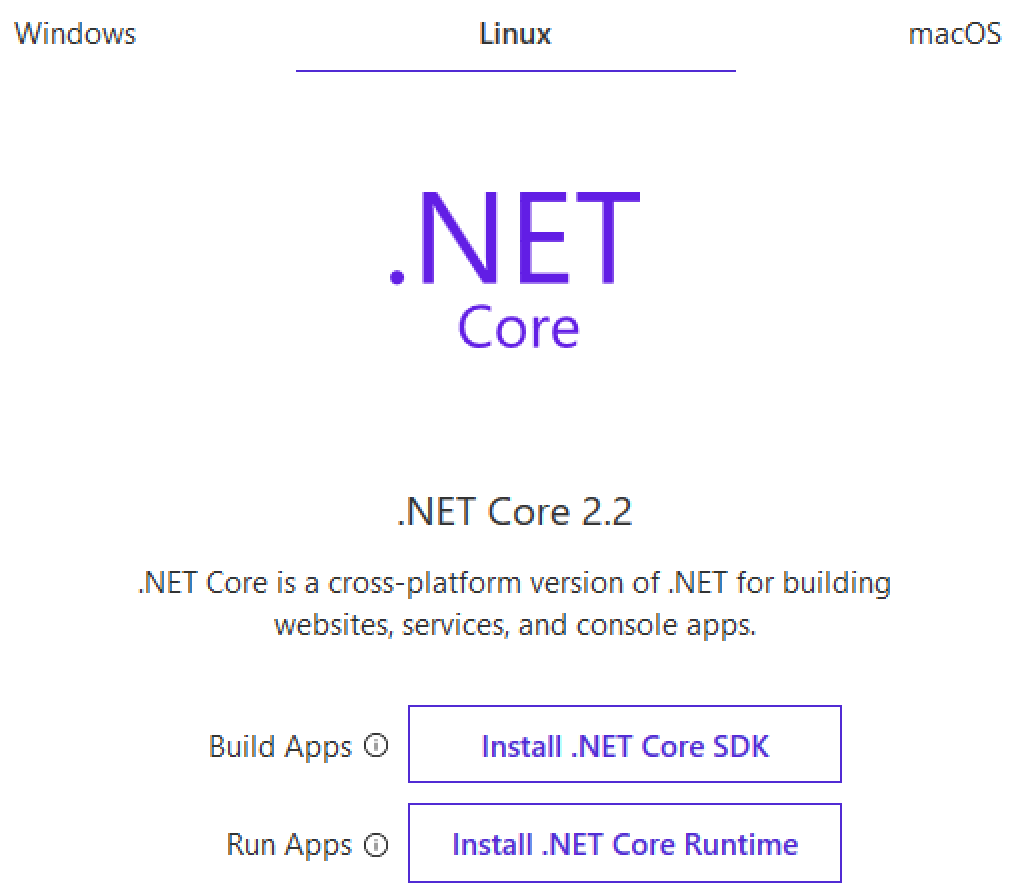
1. Preparing environment

In order to build multi-platform applications using .NET Core on Linux, the first steps are for installing in our Linux machine the required tools.

We need to install .NET Core SDK from Microsoft and to allow us to develop easier, we will install an advance editor with a lot of features, Visual Studio Code from Microsoft.

Both installations are very easy and the detailed description can be found by these two links:

Install .NET Core SDK for Linux.



.NET Core 2.2

.NET Core is a cross-platform version of .NET for building websites, services, and console apps.

Install VS Code for Linux.

Once installed VS Code, you need to install a C# extension to facilitate us to code and debugging:

Install C# extension.

1.1. Check the installed Fonts availability

Check that the directory with fonts "/usr/share/fonts/truetype" is exist.

Also check that it contains *.ttf files.

If you don't see this folder, make these steps:

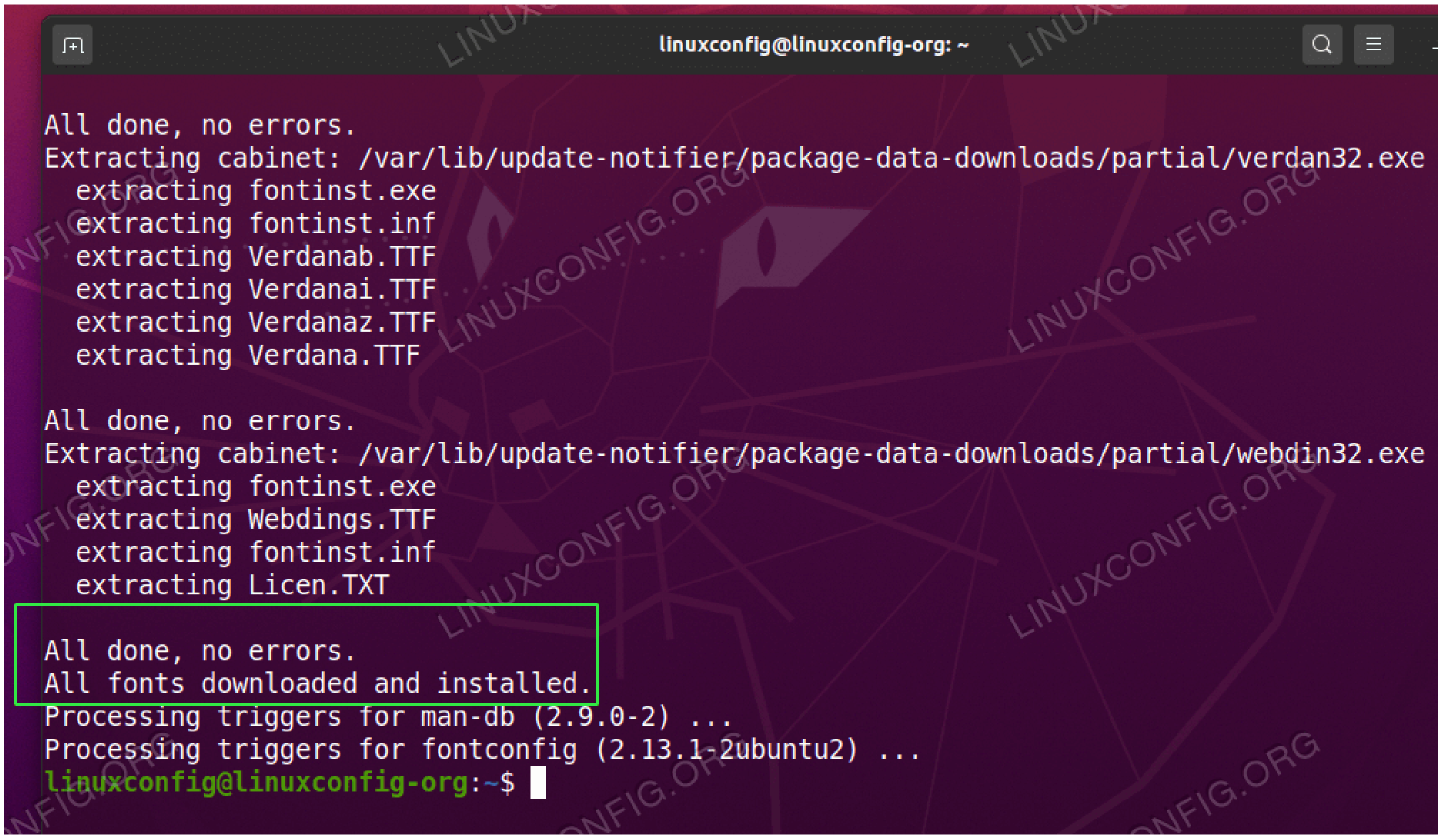
1. Download the archive with *.ttf fonts: https://sautinsoft.com/components/fonts.tar
2. Uncompress the downloaded font's archive to a directory and add it to the font path, a list of directories containing fonts:
   ```
   # tar xvzf
   ```
3. Create a directory for new fonts
   ```
   # mkdir /usr/share/fonts/truetype
   ```
4. Move the uncompressed font files to the new font directory
   ```
   # mv *.ttf /usr/share/fonts/truetype
   ```
5. Navigate to the font directory
   ```
   # cd /usr/share/fonts/truetype
   ```
6. Create fonts.scale and fonts.dir
   ```
   # mkfontscale && mkfontdir
   # fc-cache
   ```
7. Add the new font directory to the X11 font path
   ```
   # chkfontpath --add /usr/share/fonts/truetype
   ```
8. Restart X font server
   ```
   # /etc/rc.d/init.d/xfs restart
   ```

You can verify the successful addition of the new path by running `chkfontpath` command or by listing X font server's /etc/X11/XF86Config file.

If you do not have root access, copy the *.ttf to ~/.fonts directory instead.

Or you may install "Microsoft TrueType core fonts" using terminal and command:

```
$ sudo apt install ttf-mscorefonts-installer
```



```
All done, no errors.
Extracting cabinet: /var/lib/update-notifier/package-data-downloads/partial/verdan32.exe
  extracting fontinst.exe
  extracting fontinst.inf
  extracting Verdanab.TTF
  extracting Verdanai.TTF
  extracting Verdanaz.TTF
  extracting Verdana.TTF

All done, no errors.
Extracting cabinet: /var/lib/update-notifier/package-data-downloads/partial/webdin32.exe
  extracting fontinst.exe
  extracting Webdings.TTF
  extracting fontinst.inf
  extracting Licen.TXT

All done, no errors.
All fonts downloaded and installed.
Processing triggers for man-db (2.9.0-2) ...
Processing triggers for fontconfig (2.13.1-2ubuntu2) ...
linuxconfig@linuxconfig-org:~$
```

Read more about TrueType Fonts and "How to install Microsoft fonts, How to update fonts cache files, How to confirm new fonts installation" .

With these steps, we will ready to start developing.

In next paragraphs we will explain in detail how to create simple console application. All of them are based on this VS Code guide:

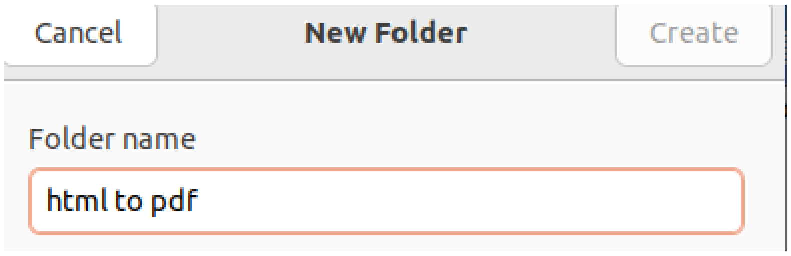
Get Started with C# and Visual Studio Code

Not only is possible to create .NET Core applications that will run on Linux using Linux as a developing platform. It is also possible to create it using a Windows machine and any modern Visual Studio version, as Microsoft Visual Studio Community 2017.

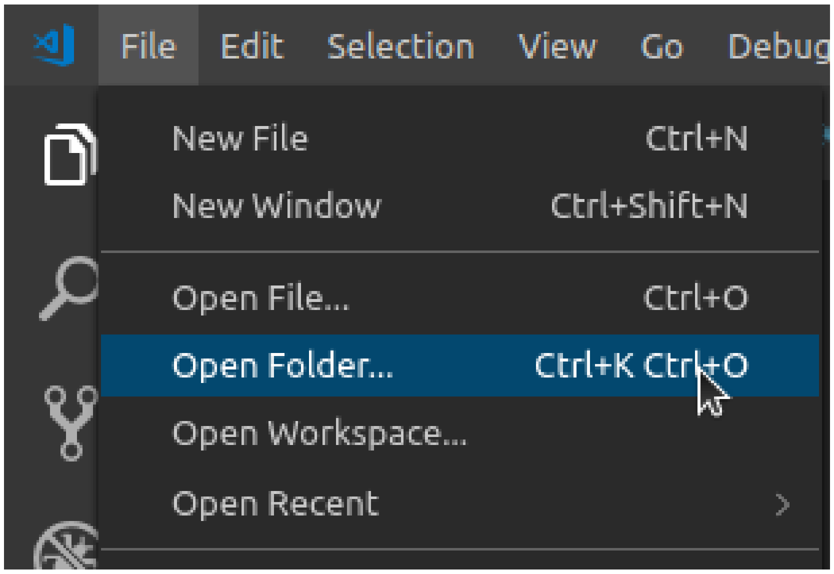
2. Creating “Convert HTML to PDF” application

Create a new folder in your Linux machine with the name ***html to pdf.***

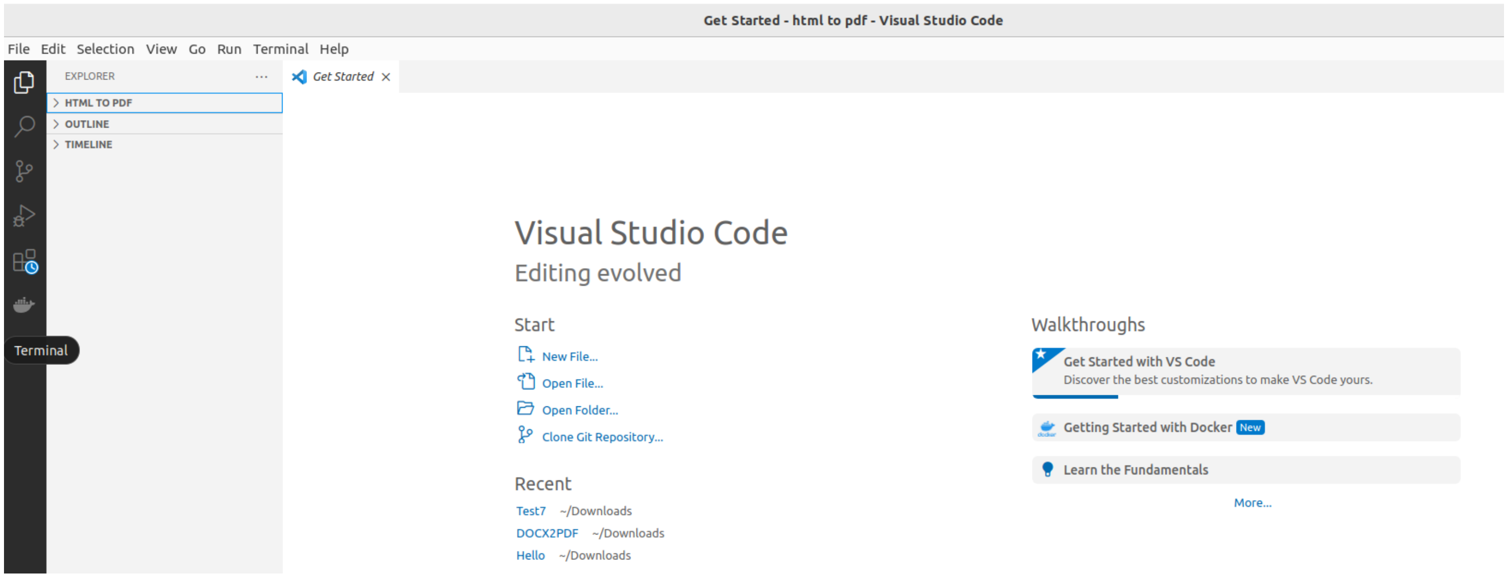
For example, let’s create the folder “***html to pdf***” on Desktop (Right click-> New Folder):



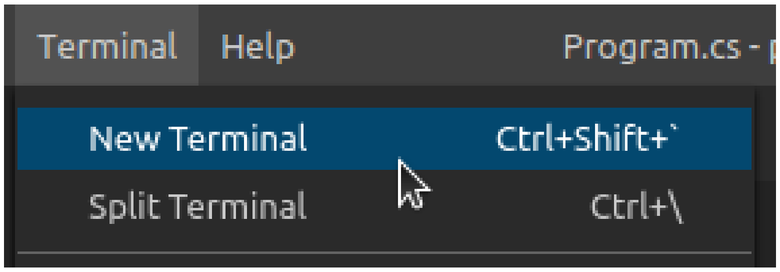
Open VS Code and click in the menu ***File->Open Folder***. From the dialog, open the folder you’ve created previously:



Next you will see the similar screen:

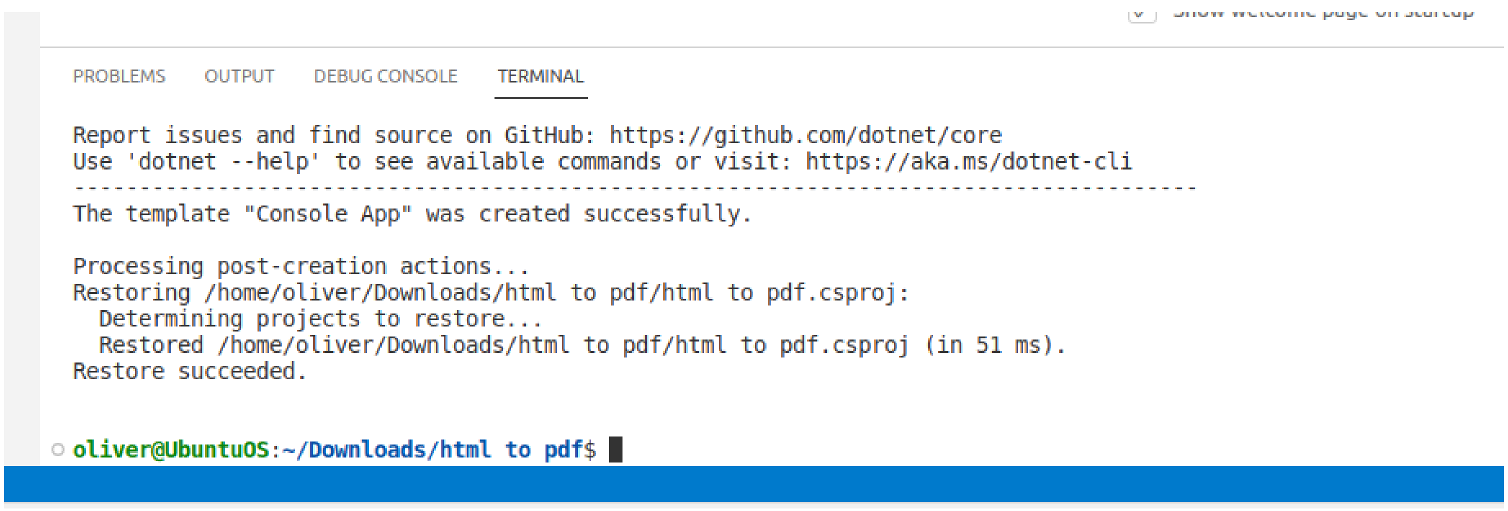


Now, open the integrated console – the Terminal: follow to the menu ***Terminal -> New Terminal*** (or press Ctrl+Shift+'):



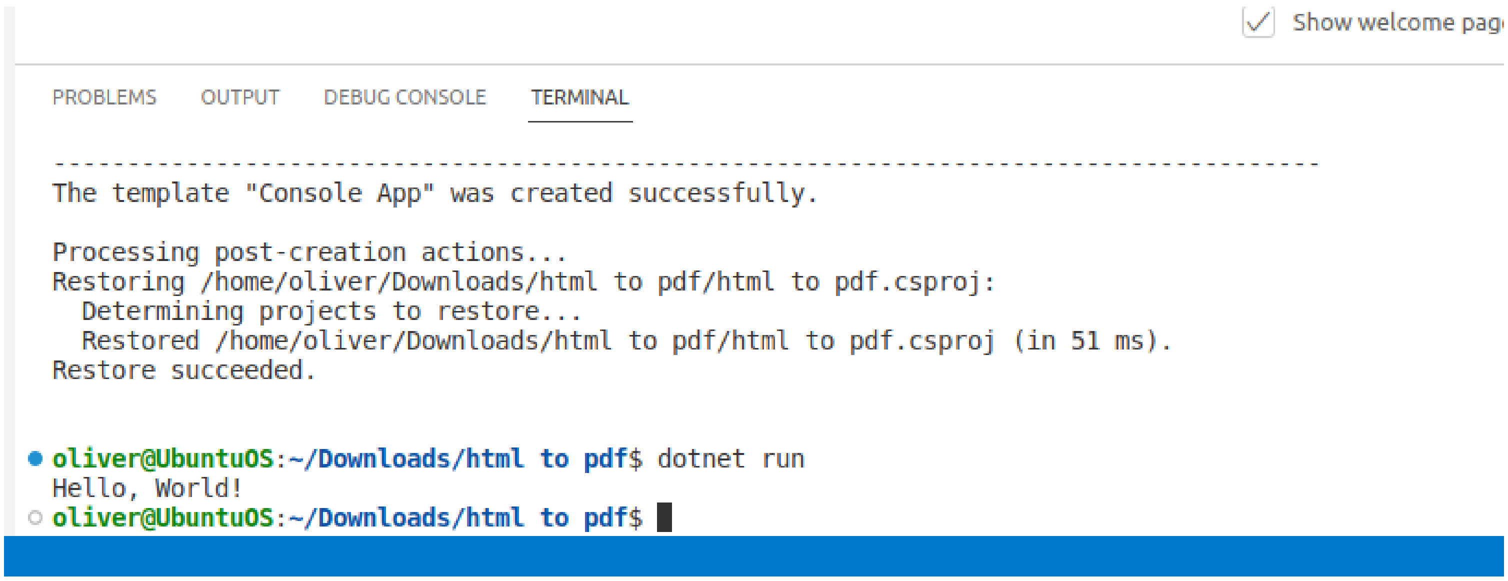
Create a new console application, using ***dotnet*** command.

Type this command in the Terminal console: ***dotnet new console***



```
Report issues and find source on GitHub: https://github.com/dotnet/core
Use 'dotnet --help' to see available commands or visit: https://aka.ms/dotnet-cli
--------------------------------------------------------------------------------
The template "Console App" was created successfully.

Processing post-creation actions...
Restoring /home/oliver/Downloads/html to pdf/html to pdf.csproj:
  Determining projects to restore...
  Restored /home/oliver/Downloads/html to pdf/html to pdf.csproj (in 51 ms).
Restore succeeded.


oliver@UbuntuOS:~/Downloads/html to pdf$
```

A new simple ***Hello world!*** console application has been created. To execute it, type this command: ***dotnet run***



```
-------------------------------------------------------------------------------------
The template "Console App" was created successfully.

Processing post-creation actions...
Restoring /home/oliver/Downloads/html to pdf/html to pdf.csproj:
  Determining projects to restore...
  Restored /home/oliver/Downloads/html to pdf/html to pdf.csproj (in 51 ms).
Restore succeeded.


oliver@UbuntuOS:~/Downloads/html to pdf$ dotnet run
Hello, World!
oliver@UbuntuOS:~/Downloads/html to pdf$
```

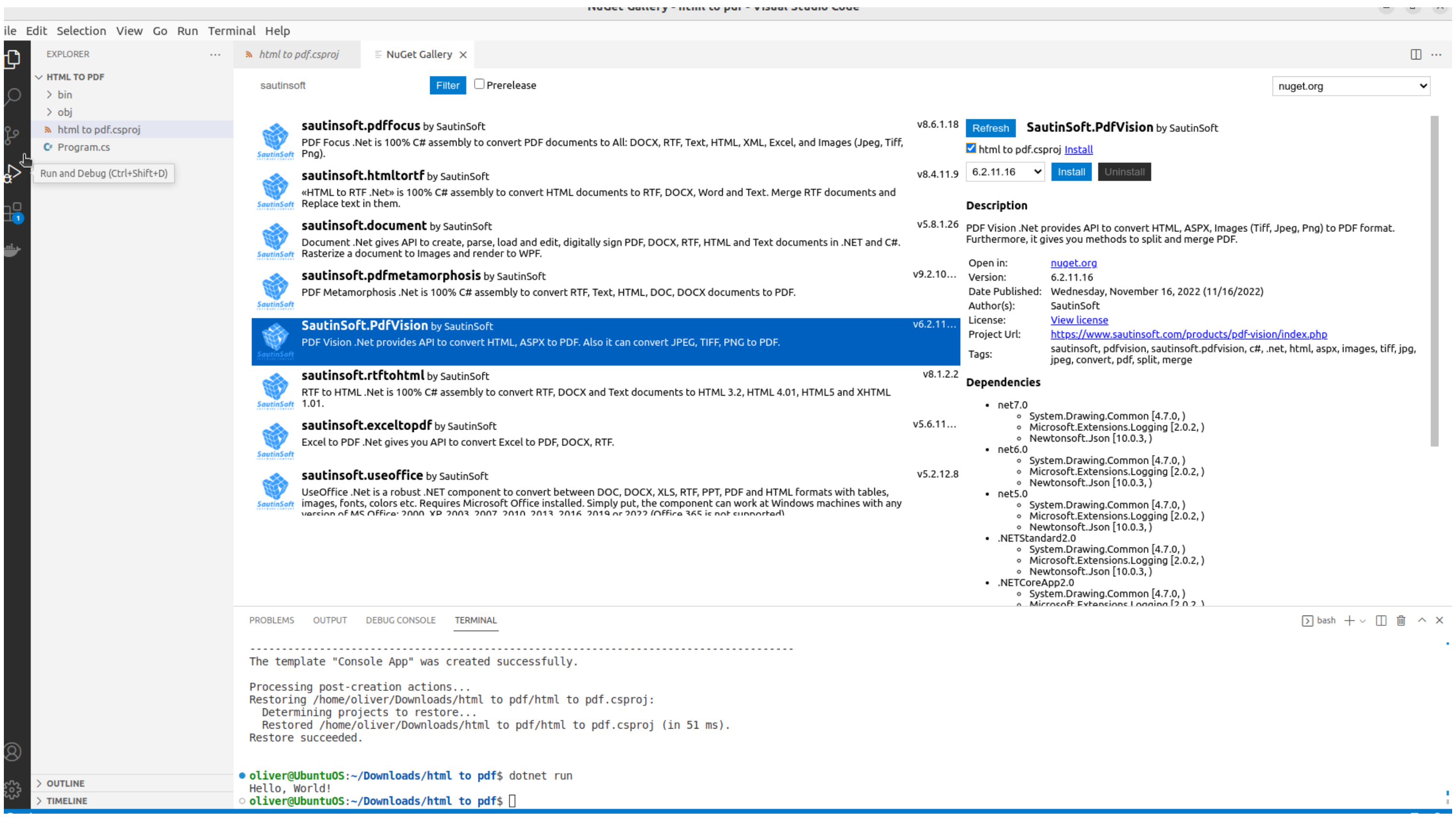
You can see the typical “Hello world!” message.

Now we are going to convert this simple application into something more interesting.

We’ll transform it into an application that will convert a html file to a pdf file.

First of all, we need to add the package reference to the ***sautinsoft.pdfvision*** assembly using Nuget.

In order to do it, follow to the ***Explorer*** and open project file “***html to pdf.csproj”*** within VS Code to edit it:



sautinsoft.pdffocus by SautinSoft — v8.6.1.18
PDF Focus .Net is 100% C# assembly to convert PDF documents to All: DOCX, RTF, Text, HTML, XML, Excel, and Images (Jpeg, Tiff, Png).

sautinsoft.htmltortf by SautinSoft — v8.4.11.9
«HTML to RTF .Net» is 100% C# assembly to convert HTML documents to RTF, DOCX, Word and Text. Merge RTF documents and Replace text in them.

sautinsoft.document by SautinSoft — v5.8.1.26
Document .Net gives API to create, parse, load and edit, digitally sign PDF, DOCX, RTF, HTML and Text documents in .NET and C#. Rasterize a document to Images and render to WPF.

sautinsoft.pdfmetamorphosis by SautinSoft — v9.2.10...
PDF Metamorphosis .Net is 100% C# assembly to convert RTF, Text, HTML, DOC, DOCX documents to PDF.

SautinSoft.PdfVision by SautinSoft — v6.2.11...
PDF Vision .Net provides API to convert HTML, ASPX to PDF. Also it can convert JPEG, TIFF, PNG to PDF.

sautinsoft.rtftohtml by SautinSoft — v8.1.2.2
RTF to HTML .Net is 100% C# assembly to convert RTF, DOCX and Text documents to HTML 3.2, HTML 4.01, HTML5 and XHTML 1.01.

sautinsoft.exceltopdf by SautinSoft — v5.6.11...
Excel to PDF .Net gives you API to convert Excel to PDF, DOCX, RTF.

sautinsoft.useoffice by SautinSoft — v5.2.12.8
UseOffice .Net is a robust .NET component to convert between DOC, DOCX, XLS, RTF, PPT, PDF and HTML formats with tables, images, fonts, colors etc. Requires Microsoft Office installed. Simply put, the component can work at Windows machines with any version of MS Office: 2000, XP, 2003, 2007, 2010, 2013, 2016, 2019 or 2022 (Office 365 is not supported)

SautinSoft.PdfVision by SautinSoft
✓ html to pdf.csproj Install
6.2.11.16

Description

PDF Vision .Net provides API to convert HTML, ASPX, Images (Tiff, Jpeg, Png) to PDF format. Furthermore, it gives you methods to split and merge PDF.

Open in:	nuget.org
Version:	6.2.11.16
Date Published:	Wednesday, November 16, 2022 (11/16/2022)
Author(s):	SautinSoft
License:	View license
Project Url:	https://www.sautinsoft.com/products/pdf-vision/index.php
Tags:	sautinsoft, pdfvision, sautinsoft.pdfvision, c#, .net, html, aspx, images, tiff, jpg, jpeg, convert, pdf, split, merge

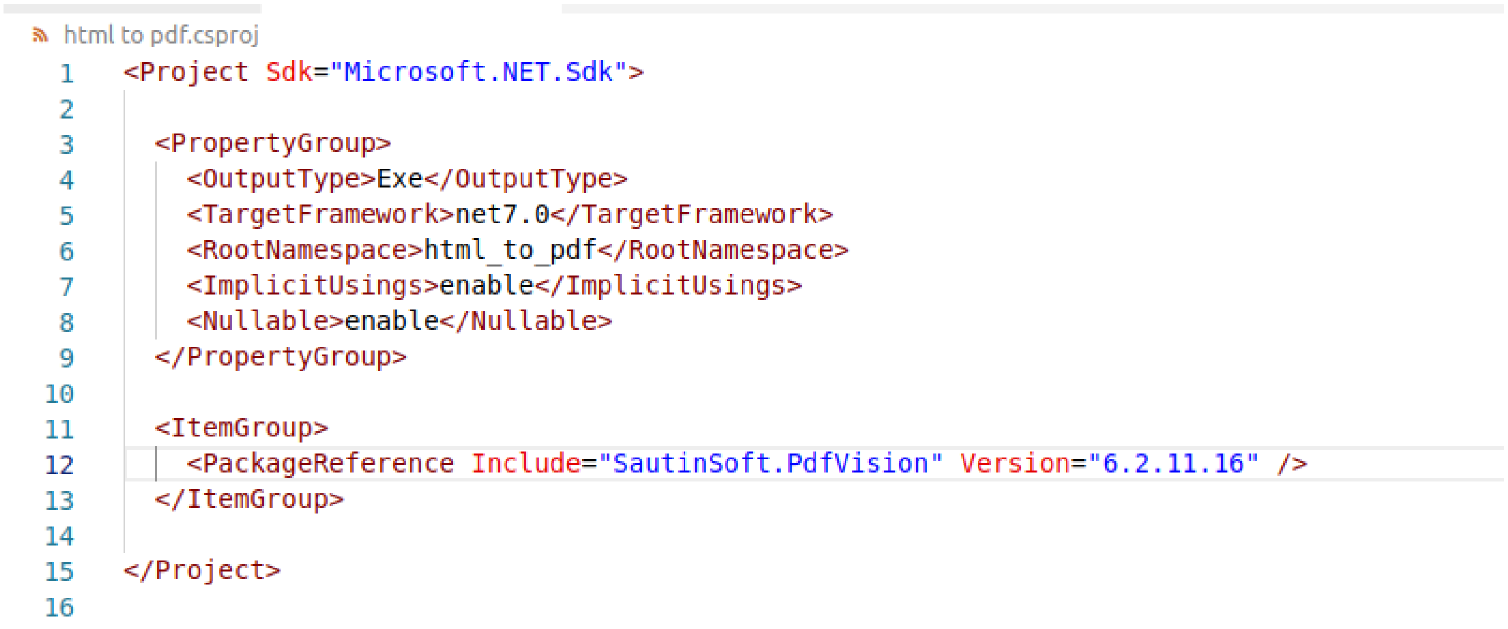
Dependencies

- net7.0
  - System.Drawing.Common [4.7.0,)
  - Microsoft.Extensions.Logging [2.0.2,)
  - Newtonsoft.Json [10.0.3,)
- net6.0
  - System.Drawing.Common [4.7.0,)
  - Microsoft.Extensions.Logging [2.0.2,)
  - Newtonsoft.Json [10.0.3,)
- net5.0
  - System.Drawing.Common [4.7.0,)
  - Microsoft.Extensions.Logging [2.0.2,)
  - Newtonsoft.Json [10.0.3,)
- .NETStandard2.0
  - System.Drawing.Common [4.7.0,)
  - Microsoft.Extensions.Logging [2.0.2,)
  - Newtonsoft.Json [10.0.3,)
- .NETCoreApp2.0
  - System.Drawing.Common [4.7.0,)
  - Microsoft.Extensions.Logging [2.0.2,)

```
-------------------------------------------------------------------------------------
The template "Console App" was created successfully.

Processing post-creation actions...
Restoring /home/oliver/Downloads/html to pdf/html to pdf.csproj:
  Determining projects to restore...
  Restored /home/oliver/Downloads/html to pdf/html to pdf.csproj (in 51 ms).
Restore succeeded.

oliver@UbuntuOS:~/Downloads/html to pdf$ dotnet run
Hello, World!
oliver@UbuntuOS:~/Downloads/html to pdf$
```

Add these lines into the file "***html to pdf.csproj***":

```
<ItemGroup>
     <PackageReference Include="sautinsoft.pdfvision" Version="" />
</ItemGroup>
```



```
<Project Sdk="Microsoft.NET.Sdk">

  <PropertyGroup>
    <OutputType>Exe</OutputType>
    <TargetFramework>net7.0</TargetFramework>
    <RootNamespace>html_to_pdf</RootNamespace>
    <ImplicitUsings>enable</ImplicitUsings>
    <Nullable>enable</Nullable>
  </PropertyGroup>

  <ItemGroup>
    <PackageReference Include="SautinSoft.PdfVision" Version="6.2.11.16" />
  </ItemGroup>

</Project>
```

It's the reference to ***sautinsoft.pdfvision*** package from Nuget.

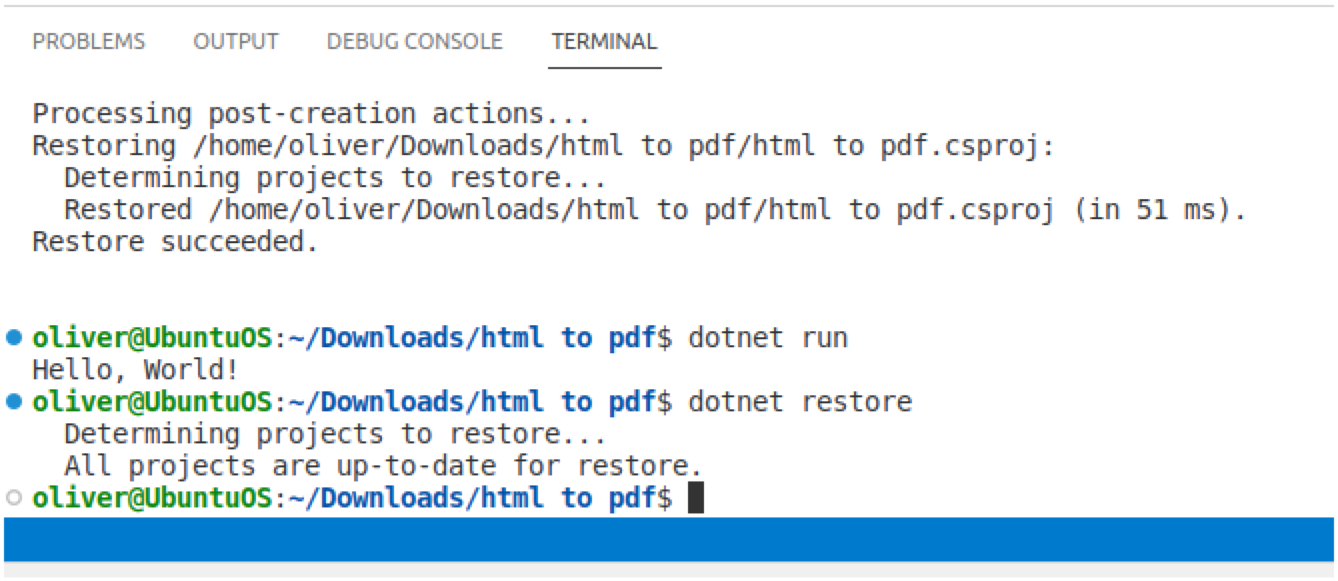
At the moment of writing this manual, the latest version of ***sautinsoft.pdfvision*** was 6.X.

But you may specify the latest version, to know what is the latest, follow:

https://www.nuget.org/packages/sautinsoft.pdfvision

At once as we've added the package reference, we have to save the "***html to pdf.csproj***" and restore the added package.

Follow to the ***Terminal*** and type the command: ***dotnet restore***



```
Processing post-creation actions...
Restoring /home/oliver/Downloads/html to pdf/html to pdf.csproj:
  Determining projects to restore...
  Restored /home/oliver/Downloads/html to pdf/html to pdf.csproj (in 51 ms).
Restore succeeded.


oliver@UbuntuOS:~/Downloads/html to pdf$ dotnet run
Hello, World!
oliver@UbuntuOS:~/Downloads/html to pdf$ dotnet restore
  Determining projects to restore...
  All projects are up-to-date for restore.
oliver@UbuntuOS:~/Downloads/html to pdf$
```

Very important!

There are a lot of Linux varieties: Suse, Fedora, Debian, Ubuntu, etc.

In addition, there are cloud platforms: AWS Lambda, Google Cloud, Azure, Apex, etc.

Because our dll works with Graphics and using GDI+ API, you need to check, that your system has System.Drawing.Common is the graphics library which ships as part of .NET Core. On macOS and Linux, it uses libgdiplus as its back-end.

There are existing ways to install libgdiplus on macOS and Linux. On macOS, you can use the mono-libgdiplus Homebrew package; on Ubuntu Linux, you can install the libgdiplus-dev package.

Using libgdiplus on Ubuntu Linux

You can install libgdiplus on Ubuntu Linux using the Quamotion PPA. Follow these steps:

```
sudo add-apt-repository ppa:quamotion/ppa
sudo apt-get update
sudo apt-get install -y libgdiplus
```

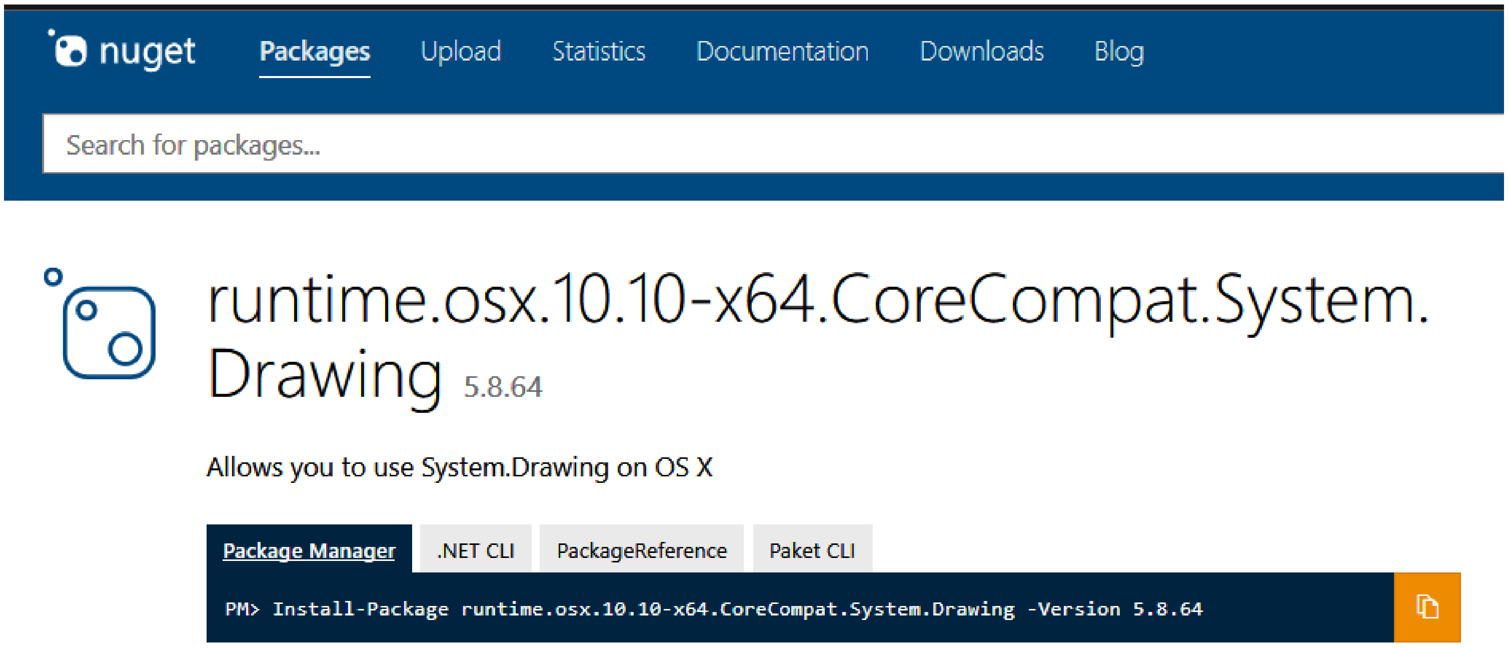
Using libgdiplus on macOS

On macOS, add a reference to the runtime.osx.10.10-x64.CoreCompat.System.Drawing package:

```
dotnet add package runtime.osx.10.10-x64.CoreCompat.System.Drawing
```

If you have installed LibGdiPlus' dll and it still doesn't work. Please add (update) this string in your project:

```
<PackageReference Include="runtime.osx.10.10-x64.CoreCompat.System.Drawing"
Version="5.23.62"/>
```



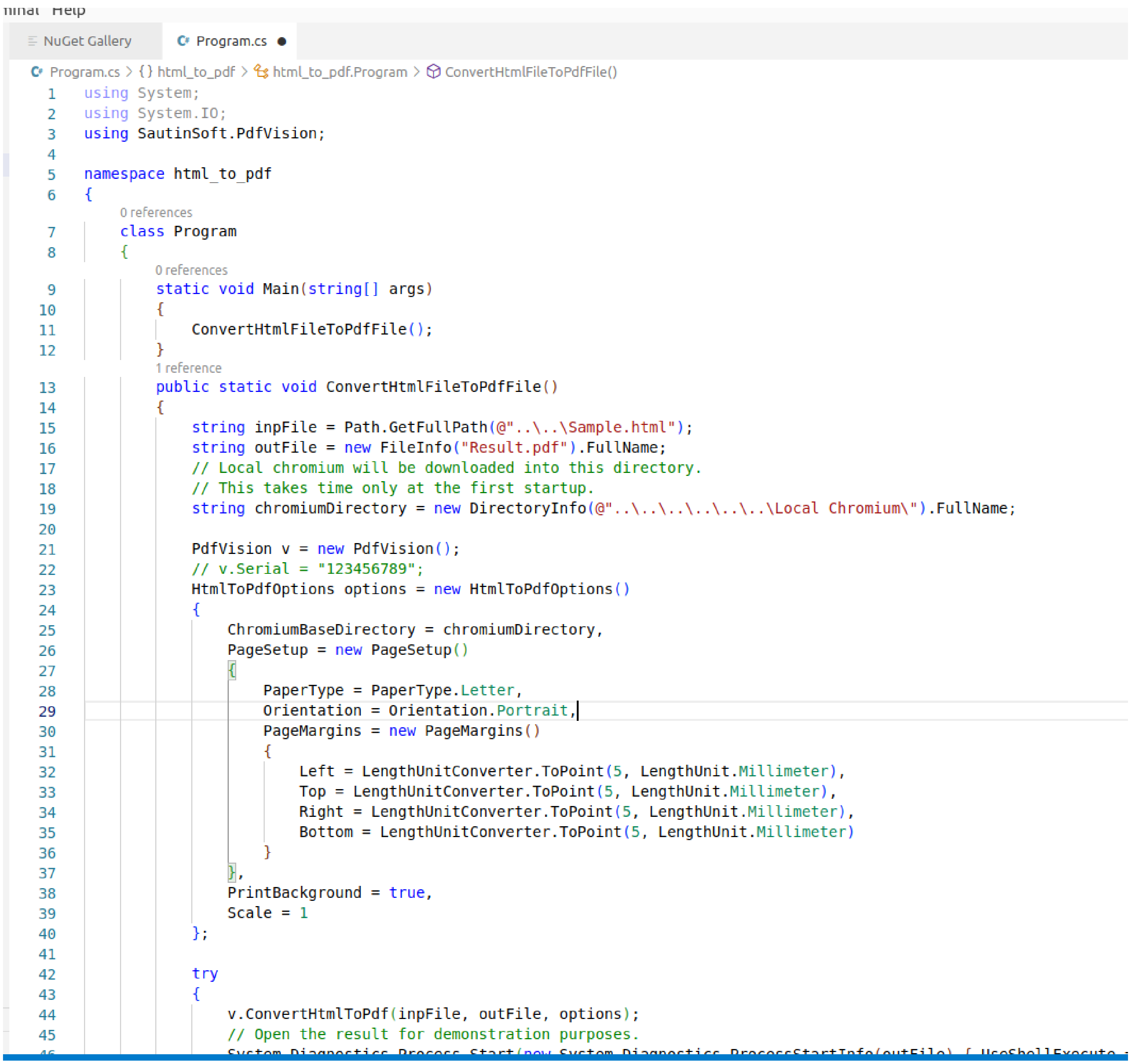
runtime.osx.10.10-x64.CoreCompat.System.Drawing 5.8.64

Allows you to use System.Drawing on OS X

```
PM> Install-Package runtime.osx.10.10-x64.CoreCompat.System.Drawing -Version 5.8.64
```

Good, now our application has the reference to ***sautinsoft.pdfvision*** package and we can write the code to convert html to pdf and other formats.

Follow to the ***Explorer***, open the ***Program.cs***, remove all the code and type the new:



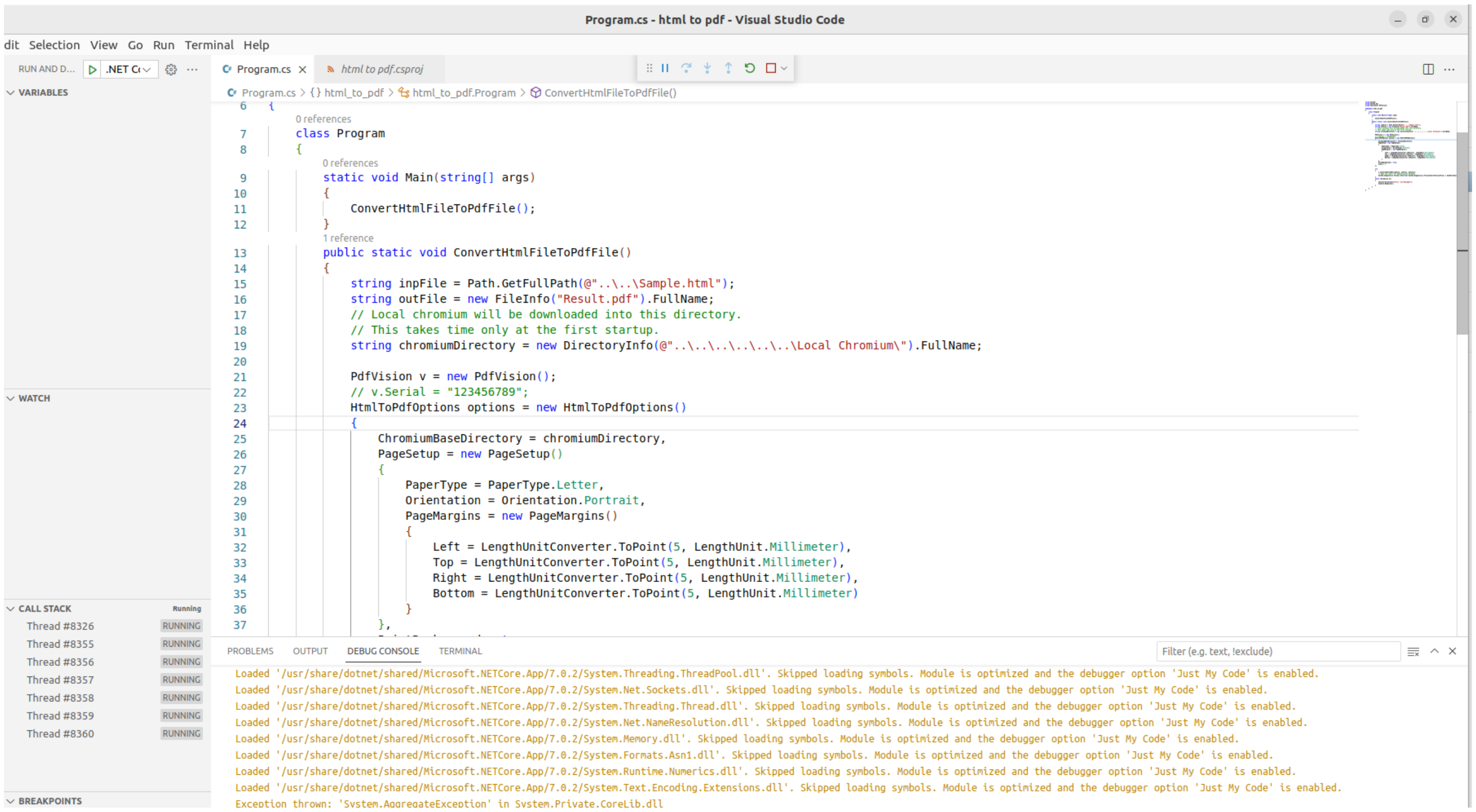
Help
NuGet Gallery
Program.cs
Program.cs > {} html_to_pdf > html_to_pdf.Program > ConvertHtmlFileToPdfFile()
0 references
0 references
1 reference

```
using System;
using System.IO;
using SautinSoft.PdfVision;

namespace html_to_pdf
{
    class Program
    {
        static void Main(string[] args)
        {
            ConvertHtmlFileToPdfFile();
        }
        public static void ConvertHtmlFileToPdfFile()
        {
            string inpFile = Path.GetFullPath(@"..\..\Sample.html");
            string outFile = new FileInfo("Result.pdf").FullName;
            // Local chromium will be downloaded into this directory.
            // This takes time only at the first startup.
            string chromiumDirectory = new DirectoryInfo(@"..\..\..\..\..\..\Local Chromium\").FullName;

            PdfVision v = new PdfVision();
            // v.Serial = "123456789";
            HtmlToPdfOptions options = new HtmlToPdfOptions()
            {
                ChromiumBaseDirectory = chromiumDirectory,
                PageSetup = new PageSetup()
                {
                    PaperType = PaperType.Letter,
                    Orientation = Orientation.Portrait,
                    PageMargins = new PageMargins()
                    {
                        Left = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter),
                        Top = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter),
                        Right = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter),
                        Bottom = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter)
                    }
                },
                PrintBackground = true,
                Scale = 1
            };

            try
            {
                v.ConvertHtmlToPdf(inpFile, outFile, options);
                // Open the result for demonstration purposes.
```

The code:

```
using System;
using System.IO;
using SautinSoft.PdfVision;


namespace Sample
{
    class Program
    {
        static void Main(string[] args)
        {
            ConvertHtmlFileToPdfFile();
        }
        public static void ConvertHtmlFileToPdfFile()
        {
            string inpFile = Path.GetFullPath(@"..\..\..\Sample.html");
            string outFile = new FileInfo("Result.pdf").FullName;

            PdfVision v = new PdfVision();
            // v.Serial = "123456789";
            HtmlToPdfOptions options = new HtmlToPdfOptions()
            {
                PageSetup = new PageSetup()
                {
                    PaperType = PaperType.Letter,
                    Orientation = Orientation.Portrait,
                    PageMargins = new PageMargins()
                    {
                        Left = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter),
                        Top = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter),
                        Right = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter),
                        Bottom = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter)
                    }
                },
                PrintBackground = true,
                Scale = 1
            };

            // Unpack portable Chromium browser if necessary.
            // To use portable Chromium add Nuget package:
SautinSoft.PdfVision.Chromium.Windows. (Linux, MacOS).
            if (!ChromiumEngine.IsExist(options.ChromiumBaseDirectory))
                ChromiumEngine.Unpack(options.ChromiumBaseDirectory);

            try
            {
                v.ConvertHtmlToPdf(inpFile, outFile, options);
                // Open the result for demonstration purposes.
                System.Diagnostics.Process.Start(new
System.Diagnostics.ProcessStartInfo(outFile) { UseShellExecute = true });
            }
            catch (Exception ex)
```

```
                {
                    Console.WriteLine($"Error: {ex.Message}");
                    Console.ReadLine();
                }
            }
        }
    }
```

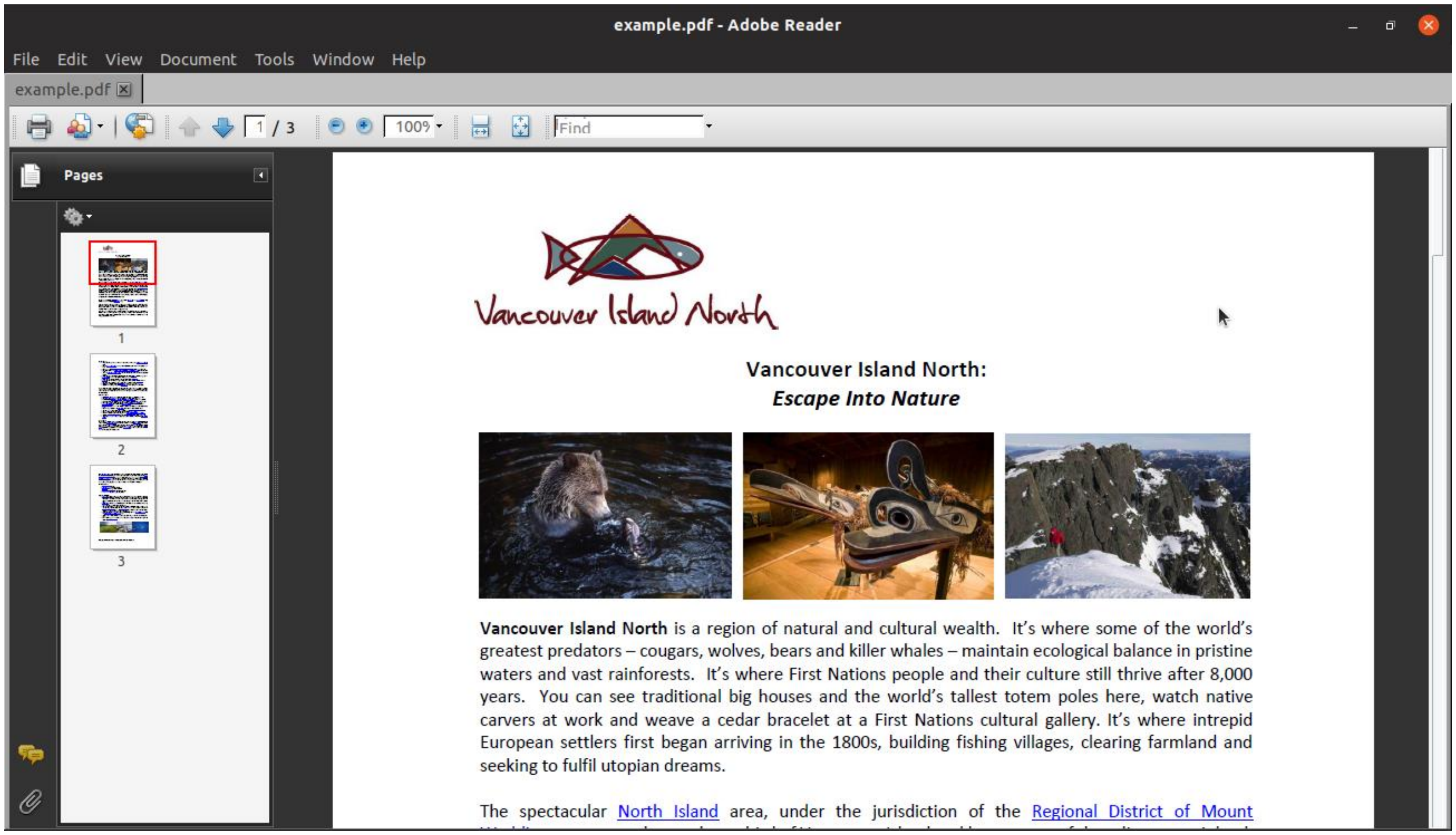


```
{
    0 references
    class Program
    {
        0 references
        static void Main(string[] args)
        {
            ConvertHtmlFileToPdfFile();
        }
        1 reference
        public static void ConvertHtmlFileToPdfFile()
        {
            string inpFile = Path.GetFullPath(@"..\..\Sample.html");
            string outFile = new FileInfo("Result.pdf").FullName;
            // Local chromium will be downloaded into this directory.
            // This takes time only at the first startup.
            string chromiumDirectory = new DirectoryInfo(@"..\..\..\..\..\..\Local Chromium\").FullName;

            PdfVision v = new PdfVision();
            // v.Serial = "123456789";
            HtmlToPdfOptions options = new HtmlToPdfOptions()
            {
                ChromiumBaseDirectory = chromiumDirectory,
                PageSetup = new PageSetup()
                {
                    PaperType = PaperType.Letter,
                    Orientation = Orientation.Portrait,
                    PageMargins = new PageMargins()
                    {
                        Left = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter),
                        Top = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter),
                        Right = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter),
                        Bottom = LengthUnitConverter.ToPoint(5, LengthUnit.Millimeter)
                    }
                },
```

```
Loaded '/usr/share/dotnet/shared/Microsoft.NETCore.App/7.0.2/System.Threading.ThreadPool.dll'. Skipped loading symbols. Module is optimized and the debugger option 'Just My Code' is enabled.
Loaded '/usr/share/dotnet/shared/Microsoft.NETCore.App/7.0.2/System.Net.Sockets.dll'. Skipped loading symbols. Module is optimized and the debugger option 'Just My Code' is enabled.
Loaded '/usr/share/dotnet/shared/Microsoft.NETCore.App/7.0.2/System.Threading.Thread.dll'. Skipped loading symbols. Module is optimized and the debugger option 'Just My Code' is enabled.
Loaded '/usr/share/dotnet/shared/Microsoft.NETCore.App/7.0.2/System.Net.NameResolution.dll'. Skipped loading symbols. Module is optimized and the debugger option 'Just My Code' is enabled.
Loaded '/usr/share/dotnet/shared/Microsoft.NETCore.App/7.0.2/System.Memory.dll'. Skipped loading symbols. Module is optimized and the debugger option 'Just My Code' is enabled.
Loaded '/usr/share/dotnet/shared/Microsoft.NETCore.App/7.0.2/System.Formats.Asn1.dll'. Skipped loading symbols. Module is optimized and the debugger option 'Just My Code' is enabled.
Loaded '/usr/share/dotnet/shared/Microsoft.NETCore.App/7.0.2/System.Runtime.Numerics.dll'. Skipped loading symbols. Module is optimized and the debugger option 'Just My Code' is enabled.
Loaded '/usr/share/dotnet/shared/Microsoft.NETCore.App/7.0.2/System.Text.Encoding.Extensions.dll'. Skipped loading symbols. Module is optimized and the debugger option 'Just My Code' is enabled.
Exception thrown: 'System.AggregateException' in System.Private.CoreLib.dll
```

To make tests, we need an input html document. For our tests, let’s place a html file with the name “sample.html” at the Desktop.

If we open this file in the default PDF Viewer, we'll its contents:


example.pdf - Adobe Reader
File Edit View Document Tools Window Help
example.pdf
1 / 3
100%
Find
Pages
Vancouver Island North

Vancouver Island North:
Escape Into Nature

Vancouver Island North is a region of natural and cultural wealth. It's where some of the world's greatest predators – cougars, wolves, bears and killer whales – maintain ecological balance in pristine waters and vast rainforests. It's where First Nations people and their culture still thrive after 8,000 years. You can see traditional big houses and the world's tallest totem poles here, watch native carvers at work and weave a cedar bracelet at a First Nations cultural gallery. It's where intrepid European settlers first began arriving in the 1800s, building fishing villages, clearing farmland and seeking to fulfil utopian dreams.

The spectacular North Island area, under the jurisdiction of the Regional District of Mount

Launch our application and convert the "sample.html" into "result.pdf", type the command:

dotnet run

Well done! You have created the "HTML to PDF" application under Linux!

If you have any troubles or need extra code, or help, don't hesitate to ask our SautinSoft Team at support@sautinsoft.com!