



Executive Summary

Artificial Intelligence is revolutionizing the world in many ways, including intelligent code completion and translating natural language into code. OpenAI's GPT-3 and GPT-4 Codex models have led the way in this domain. This 8-step guide will teach you to use GPT, an AI assistant within Visual Studio Code.

You can interact with it, use it to identify code errors, debug code, and much more. With a simple command, you can request GPT to generate code in any language. Additionally, you can ask it to explain code snippets, refactor them, create documentation, and perform other tasks. This article will guide you through installing and utilizing GPT in VS Code.

Introduction

The OpenAI Extension for Visual Studio 2022 allows developers to easily integrate and use OpenAI's cutting-edge artificial intelligence (AI) capabilities in their applications.

The extension provides access to OpenAI's powerful language models, GPT-3, and other machine learning algorithms.

With the OpenAI Extension, developers can quickly generate natural language text, summarize articles, and perform sentiment analysis, among other capabilities.

The extension also provides an interface for testing and refining AI models and integrating them into other applications.

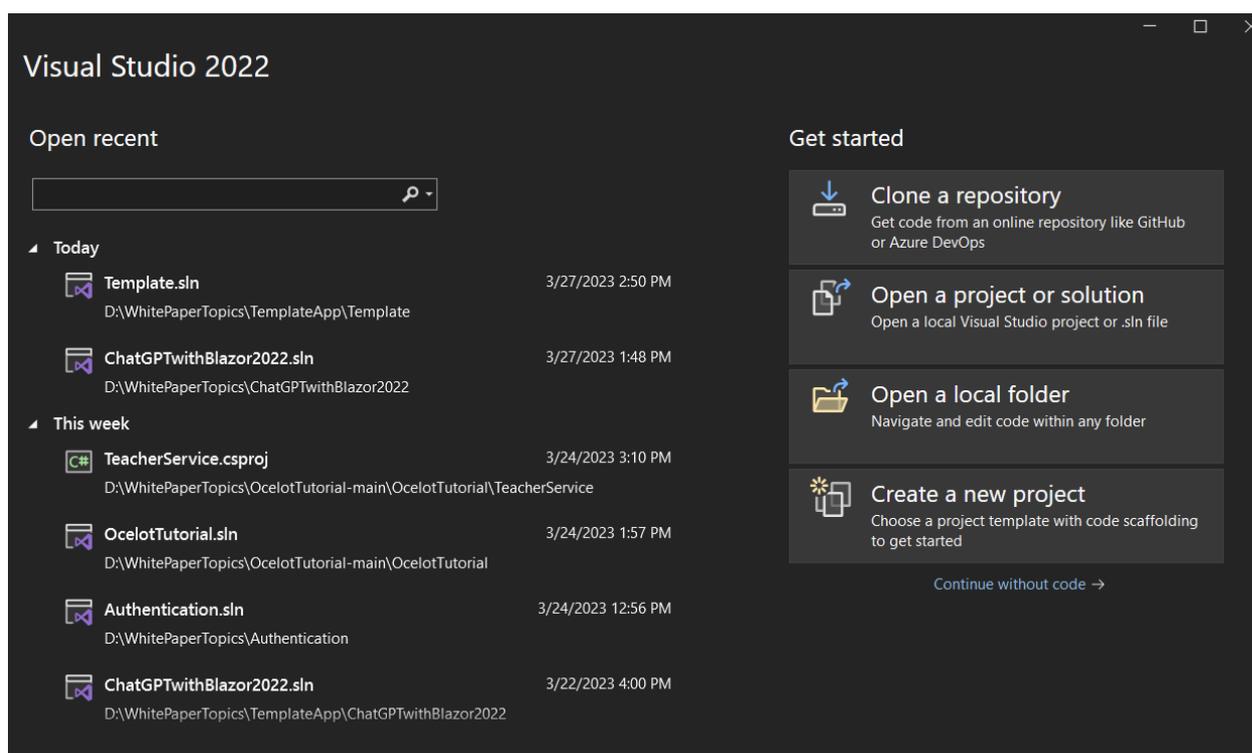
The OpenAI Extension is designed to be user-friendly, with intuitive controls and clear documentation. It also leverages Visual Studio 2022's powerful code editing and debugging features, quickly writing and debugging AI-powered applications.



Proposed Solution / Design

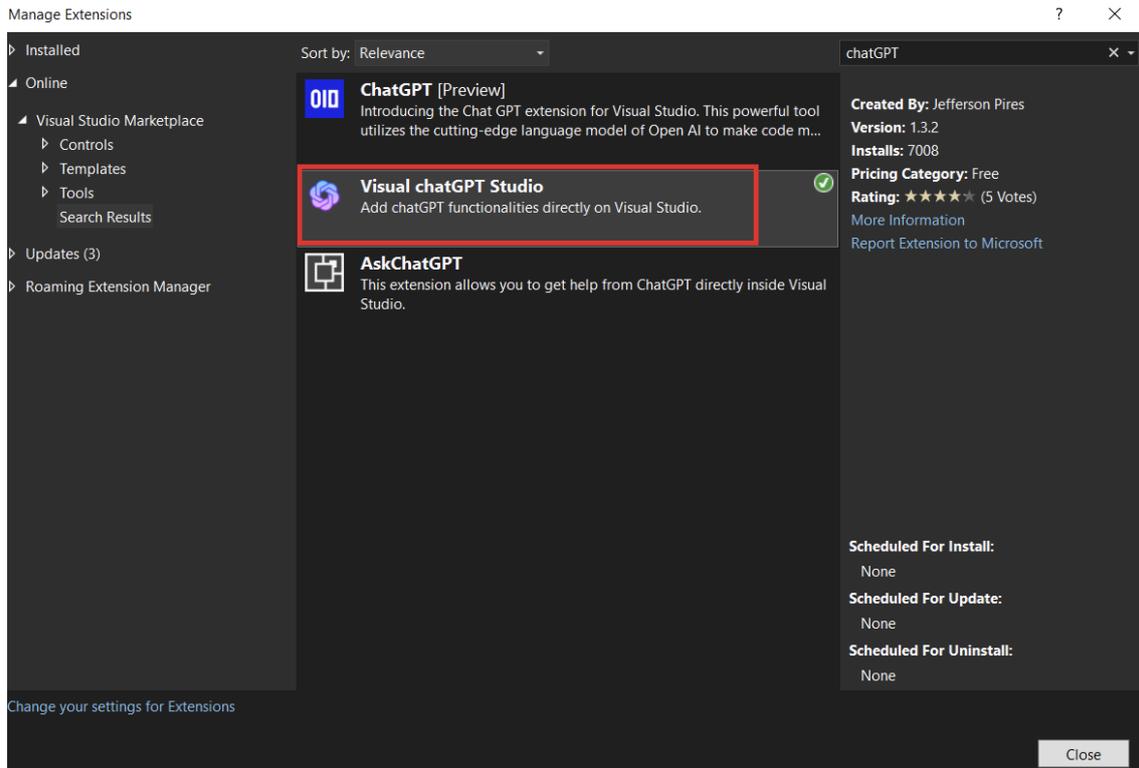
Step 1:

Download and install the latest version of Visual Studio 2022.



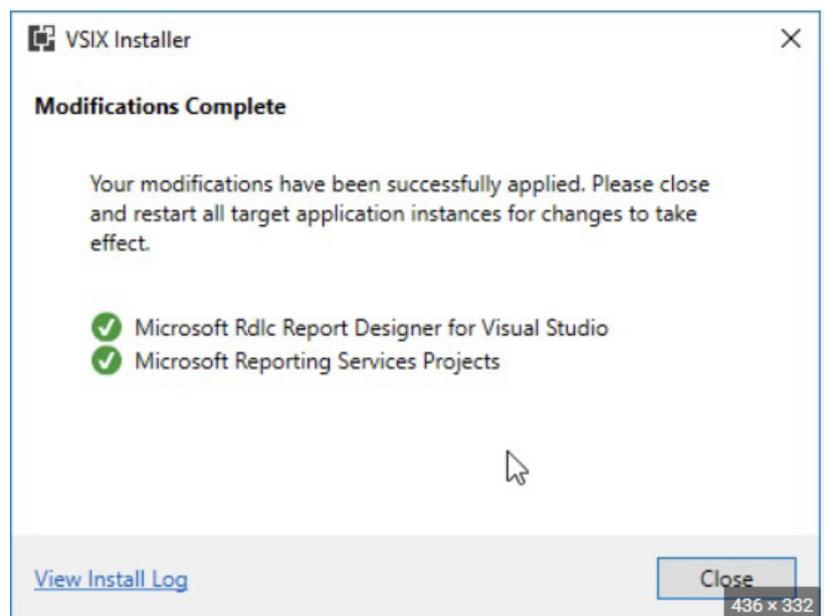
Step 2:

Open Visual Studio, go to Extensions > Manage Extensions, and search for "Visual ChatGPT Studio."



Step 3:

Download and Install the “Visual ChatGPT Studio” extension. Before install this extension, please close all visual studio extensions.





Step 4:

Download the OpenAI key from OpenAI Website by using the following link.

<https://platform.openai.com/account/api-keys>

Overview Documentation API reference Examples Playground Upgrade Help Personal

ORGANIZATION
Personal
Settings
Usage
Members
Billing

USER
API Keys

API keys

Your secret API keys are listed below. Please note that we do not display your secret API keys again after you generate them.

Do not share your API key with others, or expose it in the browser or other client-side code. In order to protect the security of your account, OpenAI may also automatically rotate any API key that we've found has leaked publicly.

You currently do not have any API keys. Please create one below.

+ Create new secret key

Default organization

If you belong to multiple organizations, this setting controls which organization is used by default when making requests with the API keys above.

Personal

Note: You can also specify which organization to use for each API request. See [Authentication](#) to learn more.

Step 5:

Create a new secret key.

Overview Documentation API reference Examples Playground

ORGANIZATION
Personal
Settings
Usage
Members
Billing

USER
API Keys

API keys

Your secret API keys are listed below. Please note that we do not display your secret API keys again after you generate them.

Do not share your API key with others, or expose it in the browser or other client-side code. In order to protect the security of your account, OpenAI may also automatically rotate any API key that we've found has leaked publicly.

SECRET KEY
sk-...vk3w

+ Create new secret key

Default organization

If you belong to multiple organizations, this setting controls which organization is used by default when making requests with the API keys above.

Personal

Note: You can also specify which organization to use for each API request. See [Authentication](#) to learn more.

API key generated

Please save this secret key somewhere safe and accessible. For security reasons, **you won't be able to view it again** through your OpenAI account. If you lose this secret key, you'll need to generate a new one.

sk-GvEqSCdZ4Z3o5H6pbiaHT3BibkFJBrAlAaTpGc7VfRVfvk3v

OK

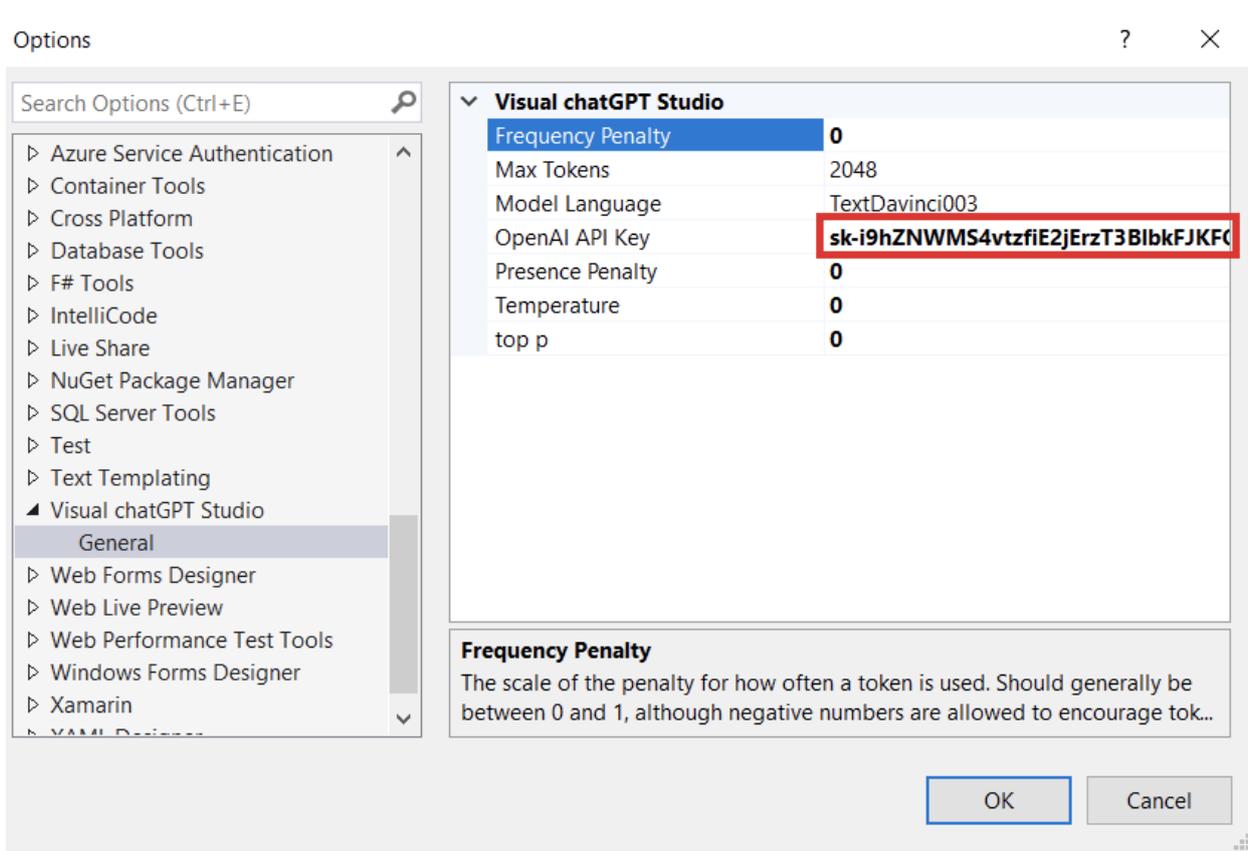


Step 6:

Copy the secret key in Visual Studio 2022.

Open Visual Studio 2022 and go to the “Tools” menu.

1. Select “Options” from the drop-down menu.
2. In the “Options” window, navigate to “Visual ChatGPT Studio.”

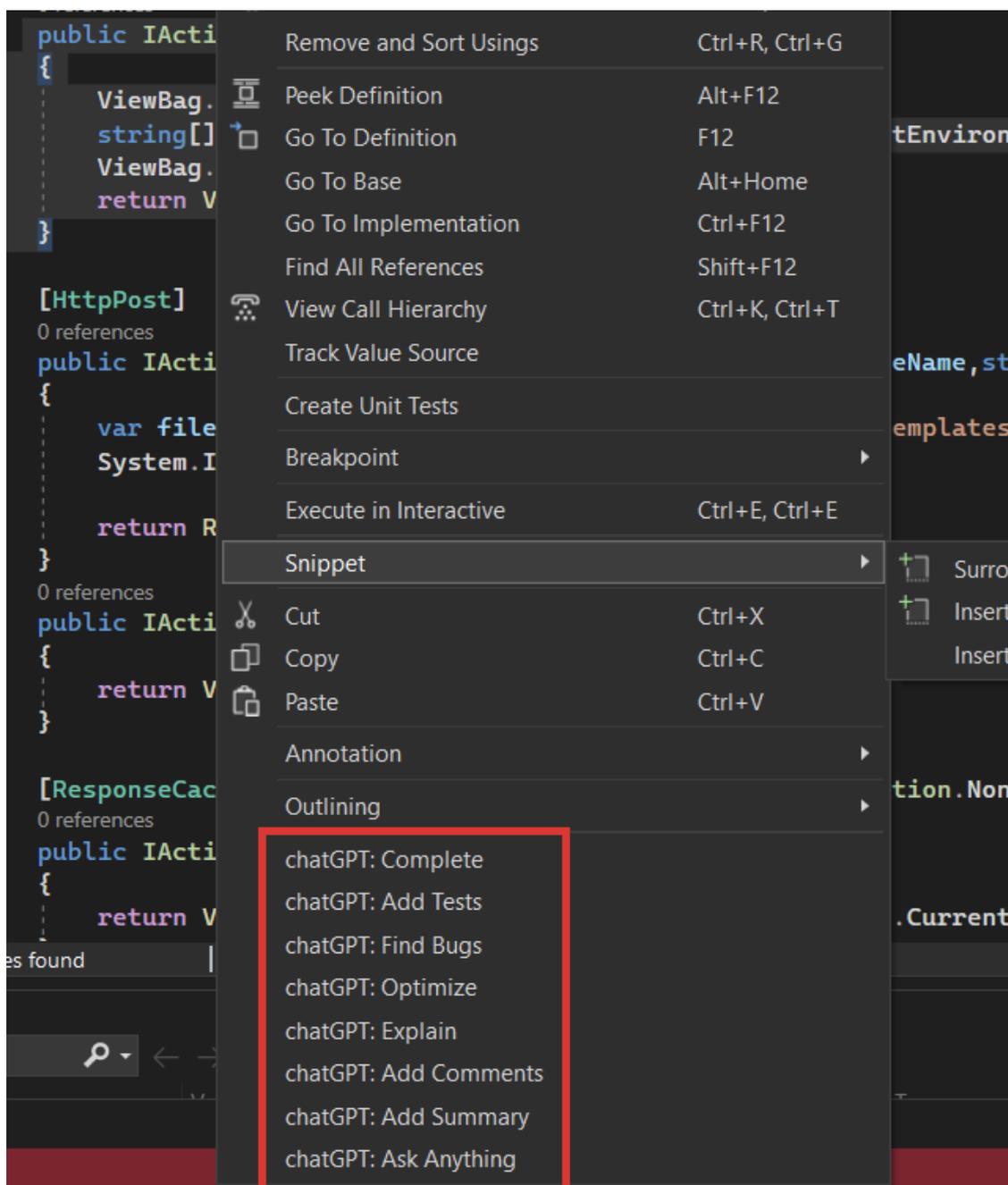


In the image above, the OpenAI Key has already been copied. Now, paste it into the OpenAI API Key field.



Step 7:

Finally, select the code you want to optimize, add comments to, etc. The red highlighted content below displays the available features from ChatGPT.





Step 8:

Before optimization.

```
[HttpGet]
0 references
public IActionResult Index(string ModuleName)
{
    ViewBag.TemplatePath = ModuleName;
    string templatePath = _webHostEnvironment.WebRootPath + $"/Templates";
    ViewBag.ListOfTemplates = Directory.GetFiles(templatePath, "*");
    return View();
}

[HttpPost]
```

After, optimization with OpenAI ChatGPT.

```
[HttpGet]
0 references
public IActionResult Index(string ModuleName)
{
    ViewBag.TemplatePath = ModuleName;
    string templatePath = Path.Combine(_webHostEnvironment.WebRootPath, "Templates");
    ViewBag.ListOfTemplates = Directory.GetFiles(templatePath, "*");
    return View();
}
```

Before, adding comments.

```
[HttpGet]
0 references
public IActionResult Index(string ModuleName)
{
    ViewBag.TemplatePath = ModuleName;
    string templatePath = Path.Combine(_webHostEnvironment.WebRootPath, "Templates");
    ViewBag.ListOfTemplates = Directory.GetFiles(templatePath, "*");
    return View();
}
```



After adding comments.

```
//This code is used to get the list of files in the Templates directory and store it in the ViewBag.ListOfTemplates.  
[HttpGet]  
0 references  
public IActionResult Index(string ModuleName)  
{  
    //Store the ModuleName in the ViewBag.TemplatePath  
    ViewBag.TemplatePath = ModuleName;  
    //Create a path to the Templates directory  
    string templatePath = Path.Combine(_webHostEnvironment.WebRootPath, "Templates");  
    //Get the list of files in the Templates directory and store it in the ViewBag.ListOfTemplates  
    ViewBag.ListOfTemplates = Directory.GetFiles(templatePath, "*");  
    //Return the View  
    return View();  
}
```

Pros and cons

Pros:

- ChatGPT automates code optimization, bug-finding, and code explanation without developer input.
- Provides pre-configured functionality for chatbot development, easy integration with other services, and simplifies dialog design.
- It offers an interactive text editor for developers to build and configure conversations.
- Allows for runtime environment switching and customizations for a personalized user experience.

Cons:

- Requires some manual programming to create conversation logic.
- Needs robust hardware and a solid internet connection to run.
- Can be complex and challenging for novice developers to debug.
- Limited to use in Visual Studio 2022.



Conclusion

In conclusion, the Open AI ChatGPT Extension in Visual Studio 2022 offers developers a powerful tool for creating conversational AI applications. By following the 8-step guide outlined in this white paper, developers can quickly and easily integrate ChatGPT into their Visual Studio projects and begin building intelligent chatbots and virtual assistants.

The guide provides clear and concise instructions for each step of the process, from setting up the environment and installing dependencies to training the model and deploying the application. With the help of this extension, developers can unlock the full potential of natural language processing and bring innovative conversational experiences to their users.



USA

Cupertino | Princeton
Toll-free: +1-888-207-5969

INDIA

Chennai | Bengaluru | Mumbai | Hyderabad
Toll-free: 1800-123-1191

UK

London
Ph: +44 1420 300014

SINGAPORE

Singapore
Ph: +65 6812 7888

www.indiumsoftware.com



For Sales Inquiries
sales@indiumsoftware.com



For General Inquiries
info@indiumsoftware.com

