AI Tools and Developers

Gabreilla White

# Purpose

Intention for this document is to document and propose the utilization of AI Pair Programing within the development process for developers at Gabriella White. This document focuses on the specific tool GitHub Copilot as it integrates seamlessly into the Visual Studio and Visual Studio code.

# GitHub Copilot

[Link](https://github.com/features/copilot)

The utilization of GitHub Copilot consists of AI generated responses within the editor of the IDE as well as a chat window within your IDE. Both features would promote efficiency with time as a developer would never have to leave the IDE.

The Copilot features come in the following forms:

1. Copilot tries to auto complete what you are trying to type out.
2. Copilot has a Chat window within the IDE that is just like a ChatGPT prompt.
3. Copilot can be utilized within debugging errors with friendly user interfaces.

Installation for GitHub Copilot comes in the form of two extensions:

* GitHub Copilot
* GitHub Copilot Chat

These two extensions are available in both VS and VS Code.

## Visual Studio 2022 Videos

* [Intro to C# with GitHub Copilot in Visual Studio 2022](https://youtu.be/35DWTrMeseo?si=FbqNmNeqBfBq514S)
* [GitHub Copilot Tips for .NET Developers | .NET Conf 2023](https://youtu.be/nsSNVZF8NYo?si=fY40rFYewxFWr8MK)

## Visual Studio Code Videos

* [Can you use ChatGPT in VS Code??](https://youtu.be/gDJzr9DBKTI?si=-WTWYg6SxReMyfwt)
* [Get Started with the Future of Coding: GitHub Copilot](https://youtu.be/Fi3AJZZregI?si=2Ut6Z27cT6RwLRco)
* [Making a AI Generated Website with GitHub Copilot in 8 Minutes](https://youtu.be/zaslz4myzE0?si=W61bmbI9ctRlycuA)

## Summary

From the above videos, GitHub Copilot is Microsoft’s choice of an AI pair programmer. Applying GitHub Copilot to Gabriella White development, the following points apply:

* GitHub Copilot extensions for Visual Studio 2022 and Visual Studio Code help minimize time outside of the IDE for a developer.
* Copilot utilizes code within the project and can make development choices that match the nuances that we have utilized as standard development.

## Security

[Link](https://resources.github.com/copilot-trust-center/)

GitHub Copilot for Businesses does not retain any prompts or source code when generating suggestions. Data that is transmitted back and forth depends on settings configured for Copilot and what general context the prompt is generated at the time (open tabs, length of code, etc.). All data is not retained.

## Pricing

Copilot Individual

* Price: $10 a month / $100 a year

Copilot Business

* Price: $19 per user per month
* Features:
  + Code completions
  + Chat in IDE and Mobile \*\*\*mobile coming soon \*\*\*
  + Security vulnerability filter
  + Code referencing
  + Public code filter
  + Enterprise-grade security, safety, and privacy

Copilot Enterprise \*\*Expected FEB 2024\*\*

Everything from Copilot Business, plus:

* Chat personalized to codebase
* Documentation search and summaries
* Pull request summaries
* Code review skills
* Fine-tuned models

## Open Thoughts

1. GitHub vs Azure Dev Ops:

With considering utilizing GitHub Copilot and at which price point Gabreilla White selects to run with, raises the question of continuing running with Azure Dev Ops. There can be some perks with moving to a different repository:

* Enterprise Copilot within Code base
* Jira integration with GitHub

This also needs to be considered with Enterprise coming in February 2024 and with GitHub owned by Microsoft it is not that likely they will abandon Azure. This technology is cutting edge and rapidly evolving.