**Activity 1: Writing and Enhancing API Code with Copilot**

**Activity Introduction**

Generative AI tools like Microsoft Copilot are powerful assistants for writing code that generate code based on your instructions.

In this activity, you will use Copilot to write and enhance API code for a User Management API. This project will give you practice writing code yourself and using Copilot to help. You’ll use Copilot to generate code and then enhance and test that code.

This is the first of three activities in which you will develop and code a back-end API project. The final output will be a working API project that you can use to demonstrate your understanding of back-end development.

**Activity Instructions**

**Step 1: Review the scenario**

To begin, review the following scenario to understand the intent of this API project.

You’ve been hired by TechHive Solutions to develop a User Management API for their internal tools. The HR and IT departments need an API that allows them to create, update, retrieve, and delete user records efficiently. Your task is to build the core functionality of the API, using Microsoft Copilot to scaffold, enhance, and test the code.

**Step 2: Set up the project**

Next, start setting up your project.

* Create a new ASP.NET Core Web API project named UserManagementAPI.
* Use Microsoft Copilot to scaffold the project setup, including adding boilerplate code to Program.cs.

**Step 3: Generate API endpoints**

Then use Copilot to help you generate API endpoints.

* Use Copilot to generate CRUD endpoints for managing users:
  + GET: Retrieve a list of users or a specific user by ID.
  + POST: Add a new user.
  + PUT: Update an existing user's details.
  + DELETE: Remove a user by ID.

**Step 4: Test API functionality**

Finally, to complete this project phase, test the API.

* Use Postman or a similar tool to test all CRUD endpoints.
* Document the specific ways Microsoft Copilot assisted in improving the API code and functionality.

**Step 5: Save your work**

By the end of this exercise, you should have a functional User Management API with robust CRUD operations and documentation of how Copilot contributed to code generation and enhancement. When completed, save your work. You will use this code in later activities.