**Lab1: Demonstrating Artificial Intelligence Applications with Copilot**

**Exercise 1: Classroom Exercise**

**Getting Started with Copilot: A Beginner's Guide**

Copilot, powered by OpenAI's advanced language models, is an AI tool designed to assist developers by generating code and providing contextual help directly within your development environment. Whether you're new to programming or an experienced developer, here's a step-by-step guide on how to use Copilot, along with some interesting examples.

**Step 1: Setting Up Copilot**

1. **Installation**: Install the Copilot extension in your preferred code editor (such as VS Code).
2. **Authentication**: Log in to your GitHub account and authorize the Copilot extension.
3. **Configuration**: Adjust the Copilot settings as per your preference within the code editor.

**Step 2: Writing Your First Code with Copilot**

1. **Start Coding**: Open a new file or an existing project.
2. **Trigger Copilot**: Begin typing your code or comments; Copilot will suggest completions or entire code snippets.
3. **Accepting Suggestions**: Use the tab key to accept Copilot’s suggestions or cycle through different options.

**Step 3: Using Copilot Effectively**

1. **Prompting**: Provide clear and specific comments or code snippets to get the most accurate suggestions from Copilot.
2. **Refinement**: Edit and refine the suggestions provided by Copilot to better fit your needs.
3. **Iteration**: Continue the iterative process of coding and refining with Copilot’s help.

**Example Usage:**

1. **Basic Function**:

# Function to add two numbers

def add\_numbers(a, b):

return a + b

Copilot Suggestion: def add\_numbers(a, b): return a + b

1. **Complex Function**:

# Function to find the second highest value in an array

def second\_highest(arr):

arr = list(set(arr))

arr.sort()

return arr[-2]

1. **Creative Code Generation**:

# Write a function to generate Fibonacci series up to n

def fibonacci(n):

fib\_series = [0, 1]

while len(fib\_series) < n:

fib\_series.append(fib\_series[-1] + fib\_series[-2])

return fib\_series

**Tips for Using Copilot:**

* **Clear Prompts**: Provide detailed comments or partial code to get better suggestions.
* **Iterative Approach**: Continuously refine the code with Copilot’s assistance.
* **Learning Tool**: Use Copilot as a learning tool to understand new coding patterns and techniques.

**Important Notes:**

* **Ethical Use**: Follow ethical guidelines and use Copilot responsibly.
* **Validation**: Always validate and test the generated code to ensure its correctness and suitability for your application.

**Conclusion:** Using Copilot can significantly enhance your coding experience by providing intelligent code suggestions and assisting with various programming tasks. With practice, you'll be able to leverage Copilot's capabilities to boost your productivity and improve your coding skills.

**Exercise 2: Self-Practice Exercise**

**Write a Python code to print the second highest value in an array.**

def second\_highest(arr):

unique\_arr = list(set(arr))

unique\_arr.sort()

return unique\_arr[-2]

array = [10, 20, 4, 45, 99, 45]

print("Second highest value:", second\_highest(array))

**Example of Introducing Yourself in an Interview as a Fresher:**

Output:-

Good [morning/afternoon], my name is [Your Name], and I'm thrilled to be here today to interview for the [Position Name] position. I recently graduated with a degree in [Your Degree] from [Your University] and I'm excited to begin my career in [Industry/Field]. Throughout my academic journey, I've developed a strong foundation in [Relevant Skills or Subjects], which I'm eager to apply in a practical setting.

During my studies, I actively engaged in projects that required problem-solving and collaboration. For instance, I was part of a team that developed [Briefly Describe a Project or Assignment]. This experience taught me the importance of effective communication and the ability to adapt to new challenges. I'm also proficient in [Relevant Tools or Software], which I believe will be beneficial in contributing to your team's projects.

While I may not have professional experience yet, I'm enthusiastic about learning and growing within your organization. I've been following [Company Name]'s work closely, and I'm particularly impressed by [Something Positive About the Company, e.g., innovative projects, company culture, values]. I'm confident that my dedication, willingness to learn, and passion for [Industry/Field] make me a strong fit for the team.

Thank you for considering my application. I'm excited about the opportunity to contribute to [Company Name]'s success and develop my skills as a [Position Name]. I look forward to discussing how my academic background and enthusiasm align with your team's goals.