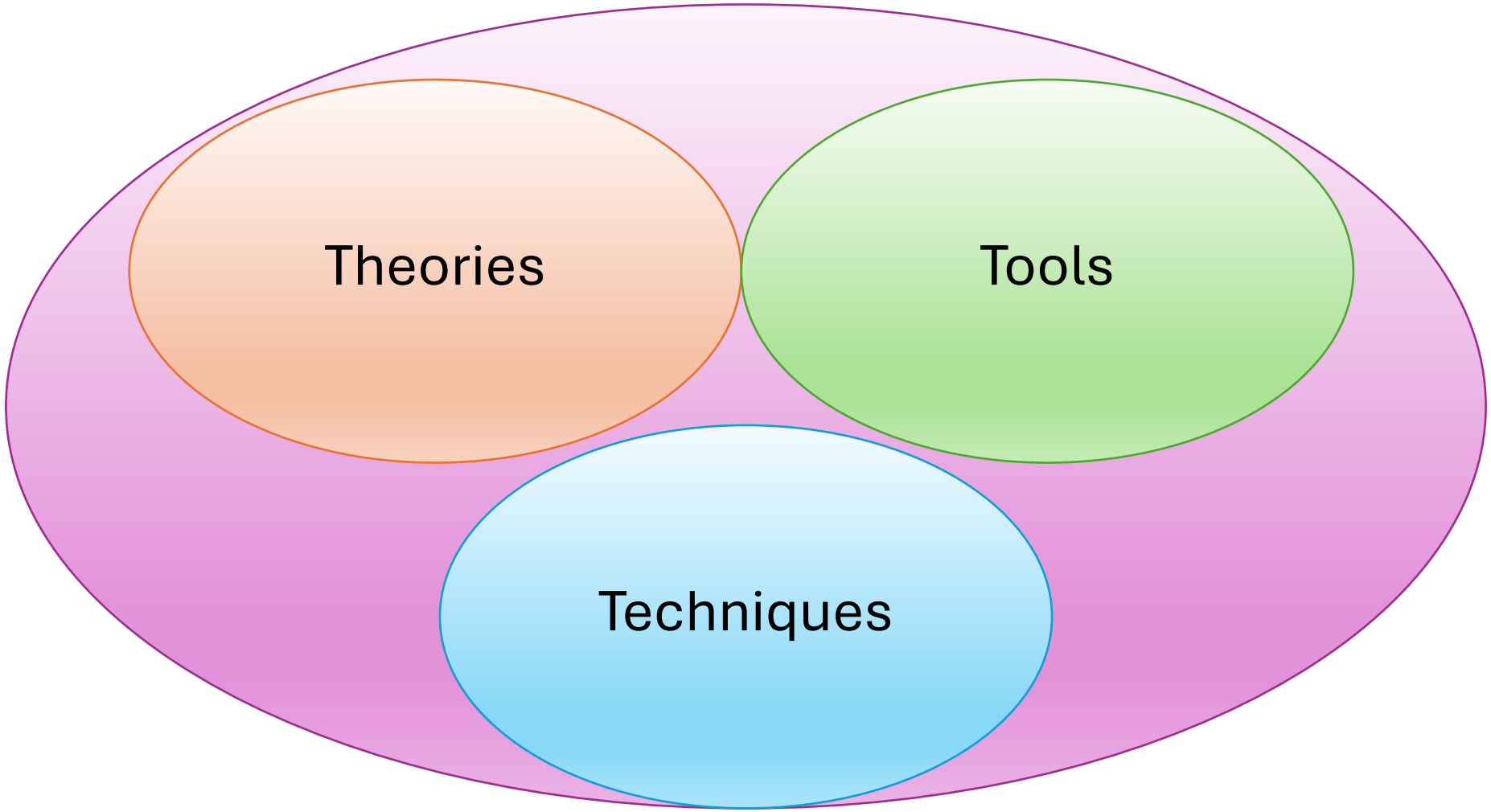
พื้นฐานการเขียนโปรแกรม

AI Assisted Programming

เทคนิคการสอน เชิงปฏิบัติการ 3T



ครั้งที่ 1 -- Theories

- Introduction to Programming Concepts
  - What is programming?
  - Why C#?
- Basic Syntax of C#
  - Data types (int, float, string, bool), variables, operators.
  - Basic input/output (Console.WriteLine, Console.ReadLine).
- Structure of a C# Program
  - Namespaces, classes, methods, the Main method.

ครั้งที่ 1 -- Tools

- Introduction to Visual Studio Code (VS Code):
  - Installation.
  - Interface overview.
  - Basic settings.
  - Extensions for C# development.
- Introduction to Polyglot Notebook
  - Installation.
  - Creating a new notebook.
  - C# kernel.
  - Running basic C# code snippets.

ครั้งที่ 1 -- Techniques

- Introduction to GitHub
  - What is GitHub?
  - Why is it important for developers?
  - Concepts of repositories, commits, branches and pull requests
  - GitHub Account Creation
  - Creating a Repository
- Basic Interaction with Copilot in VS Code
  - Basic interaction with Copilot in VS Code for simple code generation (e.g., printing to console)

ครั้งที่ 2 -- Theories

- Control Flow Statements
  - if-else
  - switch-case
  - for loop
  - while loop
  - do-while loop.
- Basic Data Structures
  - Arrays (single and multi-dimensional)
  - Lists (List<T>).

ครั้งที่ 2 -- Tools

- Using Polyglot Notebook
  - Experiment with control flow and data structures in C#.
- Debugging basics in VS Code
  - Setting breakpoints.
  - Stepping through code
  - Inspecting variables (for simple examples).

ครั้งที่ 2 -- Techniques

- Using Copilot
  - generate code snippets for control flow structures and array/list manipulation based on specific requirements.
- Using Gemini
  - understand the syntax and logic of generated code or to get explanations for errors.
- GitHub Operations
  - Pushing Changes
  - Exploring the Repository on GitHub
  - Issues

ครั้งที่ 3 -- Theories

- Functions (Methods)
  - Defining and calling methods
  - Parameters
  - Return types
  - Void methods.
- Introduction to OOP
  - Concepts of classes and objects
  - Basic syntax for defining classes and creating objects.

ครั้งที่ 3 -- Tools

- VS Code
  - Creating and using methods in VS Code
- Polyglot Notebook
  - Creating and using methods in Polyglot Notebook

ครั้งที่ 3 -- Techniques

- Using Copilot
  - Utilizing Copilot to generate simple methods based on a given description or purpose.
- Using Copilot
  - Asking Gemini to explain OOP concepts and provide examples in C#.

ครั้งที่ 4 -- Theories

- Encapsulation
  - Access modifiers (public, private, protected)
  - Properties.
- Inheritance
  - Base classes and derived classes
  - The override keyword.

ครั้งที่ 4 -- Tools

- VS Code
  - Implementing encapsulation using properties in C# within VS Code.
- Polyglot Notebook
  - Demonstrating inheritance with simple class hierarchies in Polyglot Notebook.

ครั้งที่ 4 -- Techniques

- Using Copilot
  - Utilizing Copilot to generate simple methods based on a given description or purpose.
- Using Gemini
  - Asking Gemini to explain OOP concepts and provide examples in C#.

ครั้งที่ 5 -- Theories

- Polymorphism
  - Virtual methods
  - abstract classes.
- Interfaces
  - Defining and implementing interfaces.

ครั้งที่ 5 -- Tools

- VS Code
  - Implementing polymorphism using virtual methods and abstract classes in VS Code.
- Polyglot Notebook
  - Creating and implementing interfaces in C# within Polyglot Notebook.

ครั้งที่ 5 -- Techniques

- Using Copilot
  - Using Copilot to generate code examples showcasing polymorphism and interface implementation.
- Using Gemini
  - Using Gemini to understand the differences between abstract classes and interfaces and their use cases.

ครั้งที่ 6 – Project กลุ่ม / Presentations

- หัวข้ออื่นๆ ที่น่าสนใจ