Advanced IDE Features:

1. Extensibility: Make your IDE better by adding new tools and features.

2. Version Control Integration: Easily share code with others and keep track of changes.

3. Code Autocompletion: Get helpful suggestions while writing code to avoid mistakes.

4. Built-in Terminal: Run commands and scripts without leaving your IDE.

5. Incorporating Libraries: Easily use popular libraries and frameworks in your project.

Linting:

Checks code for errors and warnings
Enforces coding standards and best practices
Tools: Flake8, PyLint

Formatting (PEP 8):

Standardizes code layout and style
Makes code more readable and maintainable
Tool: Black

Code Analysis:

Checks code for type errors and inconsistencies
Helps catch bugs and improve code quality
Tool: MyPy

Techniques and tools for effective debugging

Techniques:

Print statements: Temporarily add print statements to see variable values and code flow.
Breakpoints: Pause code execution at specific points to inspect variables and expressions.
Divide and conquer: Isolate issues by dividing code into smaller sections and testing each part.

Tools:

PDB
VS Code Debugger
PyCharm Debugger