

LIST - TRAINING TASKS

Function Overloading

- I will only accept tasks submitted **by the deadline**.
- I'll give you feedback on whether the solution is correct or not. The most important thing to me in your code is the **output**.
- The program **must display** some information (e.g., popups or messages) when it receives input or is running in a loop, indicating what action the user should take.
- It will **not** be possible to resend the code.
- An incorrect solution may negatively affect your activity grade.

Exercise 1: Enhanced Pretty Printer (Simplified)

Goal:

Create a versatile function `pretty_print` that adapts output based on type:

- **int**: show whether it's even/odd
- **float**: display with 2 decimal precision
- **str**: show length and print it in the reverse order
- **dict**: display the number of keys and list key-value pairs
- **Default**: print type and value

Example usage

```
pretty_print(8)
pretty_print(3.14159)
pretty_print("Hello World")
pretty_print("A very long string example to test the reversal and length handling.")
pretty_print({"x": 1, "y": 2})
pretty_print({"name": "Alice", "age": 30, "city": "Wonderland" })
```

Exercise 2: Shape Area & Perimeter Calculator (Simplified)

Goal:

Build a calculator using `singledispatch` to compute both **area** and **perimeter** for shape objects.

Supported Shapes:

- `Circle(radius)`
- `Rectangle(width, height)`
- `Triangle(a, b, c)` – assume it forms a valid triangle

```
shapes = [  
    Circle(5),  
    Rectangle(4, 6),  
    Triangle(3, 4, 5),  
    Circle(2.5),  
    Rectangle(10, 3)  
]
```