IS1110 Tutorial 5 – Conditionals Advanced

**Overview**

This tutorial builds on your understanding of conditional logic in Python.  
You’ll practice combined conditions, nested logic, and basic error handling using try and except.

**1) Number Range Checker**

Ask the user to enter two numbers — a **start** and an **end** value.

* If both numbers are between 1 and 100 **and** start < end, print **“Valid range.”**
* If start >= end, print **“Invalid range order.”**
* If **any** of the numbers are outside 1–100, print **“Numbers out of range.”**

**2) Positive Ratio Guard**

Ask the user for two numbers, x and y.

* If both x and y are positive **and** y is not zero, print the result of x / y.
* If y is zero, print that you can’t divide by 0.
* Otherwise, print an appropriate message (e.g., **"Invalid input for division"**).

**Hint:** Use logical operators.

**3) Discount Calculator**

Ask the user for the total amount of their shopping.

* If the total is **€100 or more**, apply a **20% discount**.
* If it’s **between €50 and €99**, apply a **10% discount**.
* Otherwise, print no discount applies.  
  Then display the **final price**.

**4) Pizza Price Calculator**

Ask the user which pizza size they want: **small**, **medium**, or **large**.  
Then ask if they want **extra cheese (yes/no)**.

* Small: €8
* Medium: €10
* Large: €12
* Extra cheese adds €1.50

Print the final price.

**5) Login System**

Create a simple login system.

* Create variables: username = "admin" and password = "1234".
* Ask the user to enter a username and password.
* If both match, print **"Login successful!"**
* Otherwise, print **"Incorrect username or password."**

**Hint:** Use nested if statements.

**6) Battery Health Monitor**

Ask the user for the **battery percentage (0–100)** and whether the **charger is plugged in (yes/no).**

Rules:

* Below 10 → **“Battery critically low!”**
* 10–20 and not charging → **“Low battery — please connect your charger!”**
* 10–20 and charging → **“Charging... please wait.”**
* 20–80 → **“Battery level normal.”**
* Above 80 → **“Battery high.”**
* If charging and above 95 → **“Unplug charger to preserve battery health.”**

**7) Weather Clothing Advisor**

Ask the user for the **temperature in Celsius** and whether it is **raining (yes/no)**.  
Then, using if, elif, and else, suggest what to wear.

**Rules:**

* If the temperature is below 10 → print *“Wear a coat.”*
* If the temperature is between 10 and 20 → print *“Wear a jacket.”*
* If the temperature is 20 or higher → print *“T-shirt weather!”*
* If it’s raining, also print *“Don’t forget an umbrella!”*