Practice 15: Inventory Management

Lists of Lists and Complex Data Filtering
Module 4: Composite Data

What is a "List of Lists"?
In the real world, data doesn't exist in isolation. A product has a **name** and a **price**. In programming, we represent this by putting a small list (the product) inside a larger list (the inventory). It is like a table with rows and columns.

1. Table Structure

Imagine our technology inventory:

Index	Column 1 (Name)	Column 2 (Price)
1	Mouse	15 €
2	Monitor	120 €
3	Keyboard	19 €

To access the price of the Mouse in Snap!, we would request item 2 of item 1 from the global list.

THE CHALLENGE: Bargain Hunter 2.0

Objective: Create a program that analyzes a product catalog and tells us which items are affordable (less than 20€).

Steps to follow:

1. **Create the Catalog:** Create a variable `Catalog` (list). Add 5 items. Each item must be a list with a name and a price.
2. **Prepare the Output:** Create an empty list called `Deals`.
3. **The Filtering Algorithm:**
   - Use the for each item of Catalog block:
   - Create a temporary variable `current_price` and set it to item 2 of item.
   - **If** `current_price < 20`, add the full `item` to the `Deals` list.
4. **Result:** Make the sprite say the names of the found products.

Code Analysis

```
for each (product) of (Catalog):
Variable P <- item (2) of (product)
if (P < 20):
add (product) to (Deals)
```

Pro Task: User Input

Modify the program to ask: **"What is your maximum budget?"**. Use the answer instead of 20.