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Soar Supplier Sorting Agent

Assignment Overview

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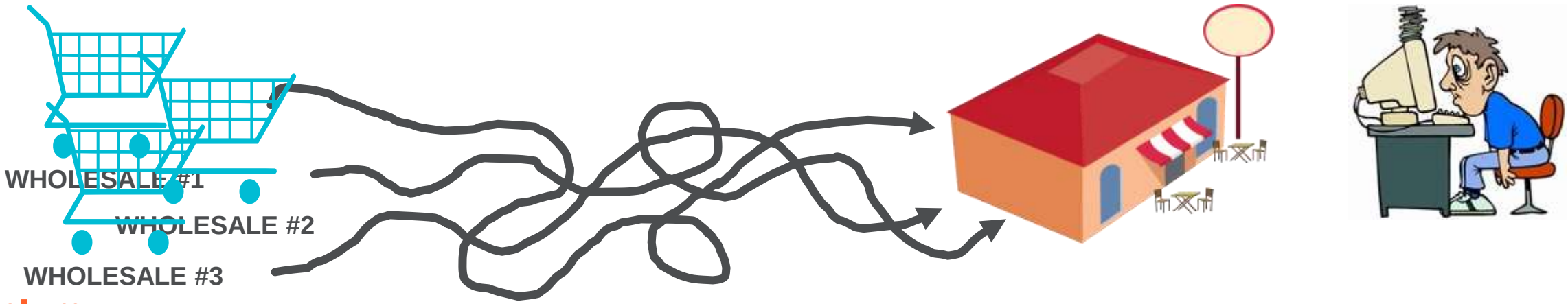
The Problem

- You run a restaurant chain.
- You need ingredients and supplies for the meals you offer!
- There are wholesale supply stores on the market that will give you great deals on their wares if you subscribe to an annual membership with them.
- How do you pick the fewest possible subscriptions to that will:
  - Minimize cost
  - Maximize the qualities you want, like quality, sustainability, speed, etc.
  - Provide all the ingredients and supplies you need?



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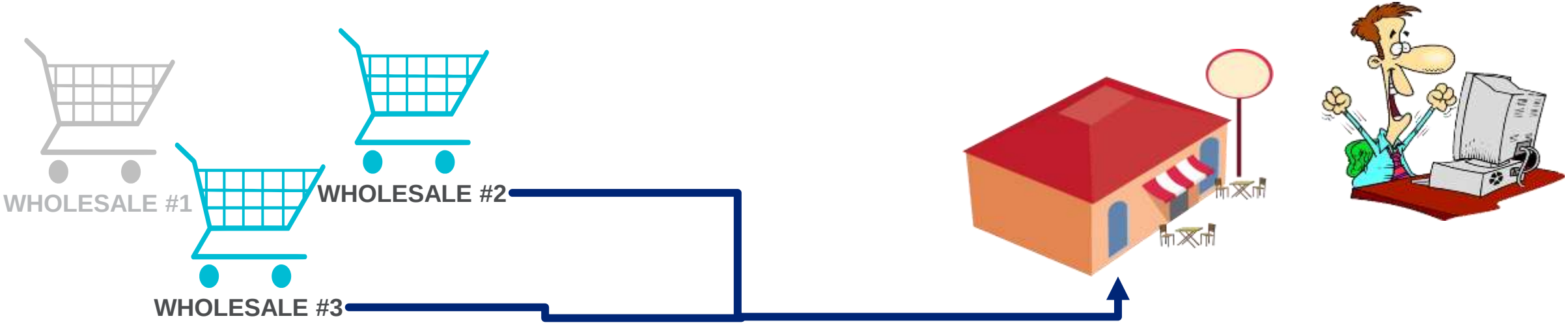
Your Mission

You will build a Soar agent that recommends which suppliers are best for you!

It will:

- Ingest info about each supplier and what they offer
- Ingest user requirements for needed supplies
- Ingest user priorities for supplier attributes (speed, quality, cost, etc.)
- Unify this knowledge to quickly sort the suppliers from best to worst



Inputs

Your agent's input will come in 3 parts:

1. A set of **candidate suppliers**
   - Each supplier comes with a set of attributes and scores.
   - The agent should sort these from best to worst.

2. User-specified attribute **priorities**
   - Gives a *weight* for each possible supplier attribute
   - The higher the weight, the more the agent should prioritize suppliers with good scores for that attribute.

3. User-specified agent **settings**
   - Max number of suppliers to recommend

Example Input

Set of Suppliers w/ Scores

Supplier 1

Cost: $35	Quality: 1
Satisfied Needs: 2	Speed: 2
Availability: 3	Sustainability: 3
Packaging: 3	

Supplier 2

Cost: $35	Quality: 3
Satisfied Needs: 2	Speed: 1
Availability: 2	Sustainability: 2
Packaging: 1	

Supplier 3

Cost: $25	Quality: 3
Satisfied Needs: 1	Speed: 1
Availability: 3	Sustainability: 3
Packaging: 3	

User Priorities

Priorities

Cost: 11.01
Sustainability: 11
Quality: 11
Availability: 8
Packaging: 8
Speed: 7

Supplier Scores are numeric:

- Cost is in $$
- All other attributes are relative, user-specified scores:
  - Integer values
  - Higher is better.

Agent Settings

Settings

Max-Output: 5

Priorities are numeric weights

- Integer or Float values
- Higher = more important
- Can tie with each other

Settings holds runtime controls for the agent

- A setting to cap the size of the output list

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Outputs

A single ordered list of Suppliers

- Up to the list size specified in the input settings