



SELF-SERVICE SUPERMARKET

FUNDAMENTALS OF AI PROJECT

INTRODUCTION



SELF - SERVICE
SUPERMARKET

The supermarket shopping experience faces some minor problems, such as wasting the customer's time in searching for a product that is not in this supermarket. Or not being aware of the available offers. Or the lack of staff to answer simple customer questions.

So we develop an expert system for self-service in supermarkets to solve this problems and make the customer take a better experience by using the prolog language on Switch.

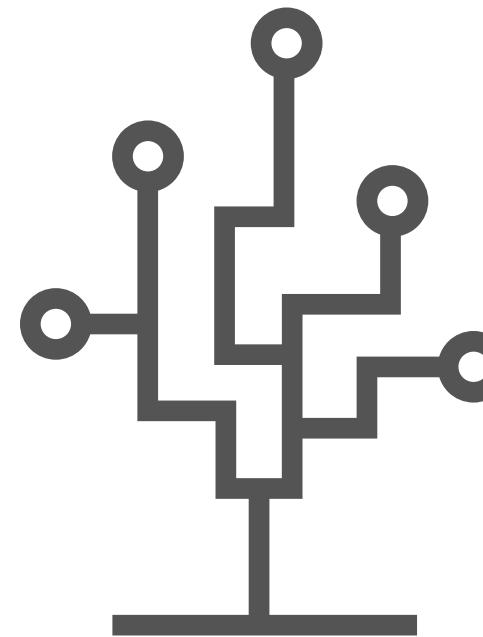


**SELF - SERVICE
SUPERMARKET**

Self-Service Supermarket System enables you to:

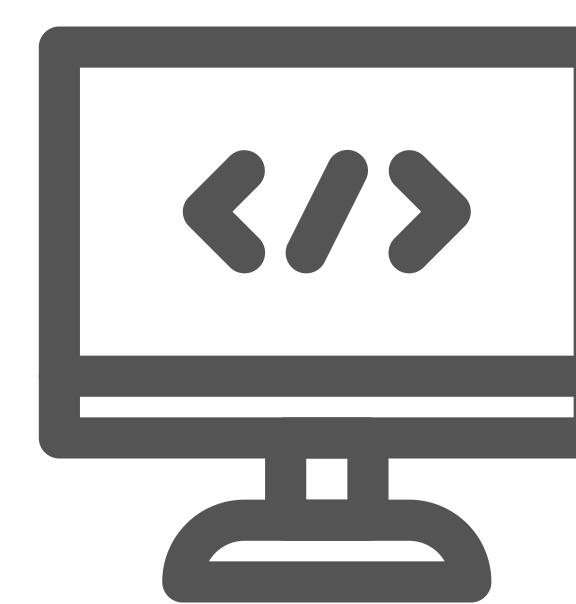
1. View all supermarkets in the system.
2. Browse all product sections in the supermarket, and search for products that fall under the required section.
3. Review all types of products in supermarkets, and search for products that fall under the required type.
4. Review all the products available in each supermarket, and it enables you to check if the product is available in the required supermarket or not.
5. View the available offers.

THEORETICAL BACKGROUND



Expert System

AI Approach



Prolog Language

Programming language



Swish, Swi-Prolog

online compiler

Steps

Initializing supermarket:
supermarkets(supermarketName).

Initializing the section:
section(sectionName).

Initializing the type:
type(typeName).

Initializing the product:
product(productName).

Initializing seasons:
Seasons(SeasonName).

Initializing sale:
Sale(SeasonName,Discount).

connection between section and type:
typeSection(sectionName, typeName).

connection between type and product:
productType(productName, typeName).

connection between supermarket and product:
supermarketProduct(supermarketsName,productName).

Establish connection between product And sales:
offer(productName,SeasonName).

Listing the product according to their supermarket:
supermarketProducts(supermarketName).

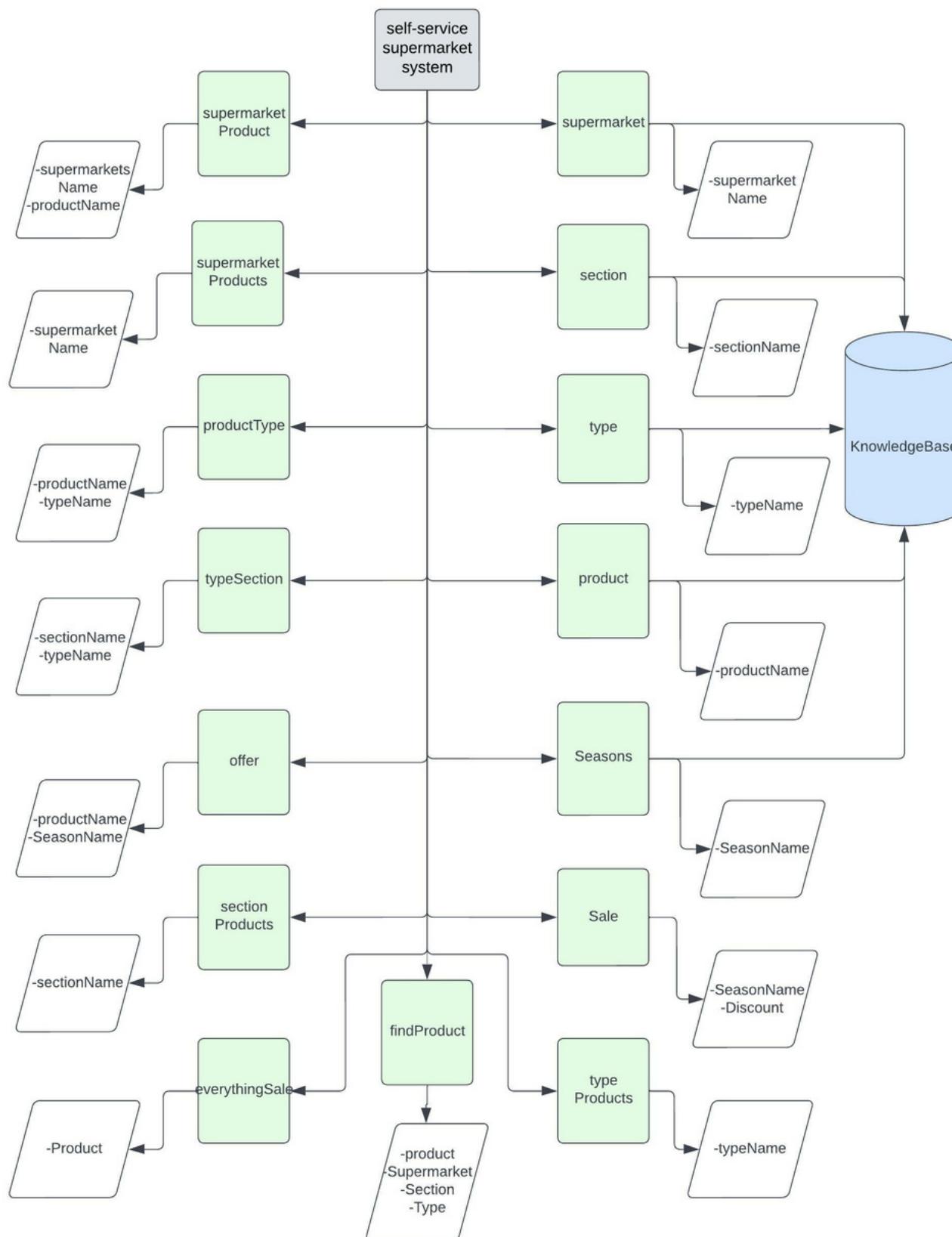
Listing the product accoding to their section:
sectionProducts(sectionName).

Listing the product with their type:
typeProducts(typeName).

Reporting everything according to the Discount :
everythingSale(Product).

find the information about product:
findProduct(product,Supermarket,Section,Type).

Flowchar



USER MANUAL

in our project, we explained how to use self-service supermarket system in details. These are some examples (for more examples you can see the report) :

```
findProduct(toast,Supermarket,Section,Type).  
  
Breakpoint 263 in 1-st clause of everythingSale/1 at Line 295  
  
Section = bakery,  
Supermarket = binDawood,  
Type = bread  
Section = bakery,  
Supermarket = panda,  
Type = bread  
Section = bakery,  
Supermarket = alRayya,  
Type = bread  
Section = bakery,  
Supermarket = danube,  
Type = bread  
false  
  
?- findProduct(toast,Supermarket,Section,Type).
```

```
section(Section).  
  
Breakpoint 273 in 1-st clause of everythingSale/1 at Line 295  
  
Section = fruit  
Section = vegetable  
Section = meat  
Section = frozenFood  
Section = bakery  
Section = dairy  
Section = cleaningProducts  
Section = groceries  
Section = delicatessen  
Section = beverage  
  
?- section(Section).
```

```
offer(steak,Season).  
  
Breakpoint 309 in 1-st clause of everythingSale/1 at Line 295  
  
Product: steak  
Offers: 90% In whiteFriday  
Product: steak  
Offers: 80% In nationalDay  
Product: steak  
Offers: 50% In eidAlAdha  
Product: steak  
Offers: 70% In eidAlFitr  
Product: steak  
Offers: 0% In normalDay  
false  
  
offer(redApple,nationalDay).  
  
Breakpoint 312 in 1-st clause of everythingSale/1 at Line 295  
Product: redApple  
Offers: 80% In nationalDay  
false
```

This is a query asking for finding products. From the program, we can see all the supermarkets with their sections and types. Therefore the Prolog displays the set of results.

This is a query asking for all the sections. From the program, we can see all the sections. Therefore the Prolog displays all the sections available.

This is a query to asking for the offer of product in season. From the program, we can see all offers. Therefore the Prolog displays all the answers.

OUTPUT/CODE TESTING

 typeProducts(apple).

Type: apple has: redApply
Type: apple has: greenApply
false

This is a query searched for Type Apple products

 typeProducts(juice).

Type: juice has: applyJuice
Type: juice has: mangoJuice
false

This is a query searched for Type Juice products

 typeProducts(orange).

false

there are no result for orange type

 findProduct(mirinda,binDawood,Section,Type).

Section = beverage,
Type = energyDrink

This is a query Searched for mirinda in "Bin Dawood" supermarket

 findProduct(mirinda,alRaya,Section,Type).

false

There is no Miranda in "Al-Raya" supermarket

 findProduct(Product,Supermarket,Section,chicken).

Product = breast,
Section = meat,
Supermarket = binDawood
Product = drumstick,
Section = meat,
Supermarket = binDawood
Product = breast,
Section = meat,
Supermarket = panda
Product = drumstick,
Section = meat,
Supermarket = alRaya

This is a query Find all chicken type information

 supermarketProducts(binDawood).

Supermarket: binDawood has: yellowBanana
Supermarket: binDawood has: babyBanana
Supermarket: binDawood has: bellPapper
Supermarket: binDawood has: bigcarrot
Supermarket: binDawood has: roast
Supermarket: binDawood has: breast
Supermarket: binDawood has: drumstick
Supermarket: binDawood has: corn
Supermarket: binDawood has: puffPastrySheets
Supermarket: binDawood has: chocolateCake
Supermarket: binDawood has: strawberryCake

This is a query searched for all "Bin Dawood" supermarket products.

 supermarketProducts(noori).

false

This is a query searched for "Nori" supermarket products, but no results appear because the system does not support this supermarket



SELF-SERVICE SUPERMARKET

THANK YOU!

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