SMOOBER

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A Project Work in *Client-Server Communication*

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Introduction

Image it takes an hour’s bus to the bakery just want to get the favourite cake but it is already been sold out. Or stand ahead and try to make decision which bread would like to buy but a bunch of people standing behind and waiting, may even start complaining. Or, get allergic to milk, eggs, peanuts, how is one supposed to know which one is possible to buy?

Smoober is a website for people ordering cakes, bread, desserts and cookies online. Here, users are able to:

- browse products
- order products online before visiting the bakery
- get information of a certain product, for example, energy
- check ingredients, make sure to lower the risk of food allergy

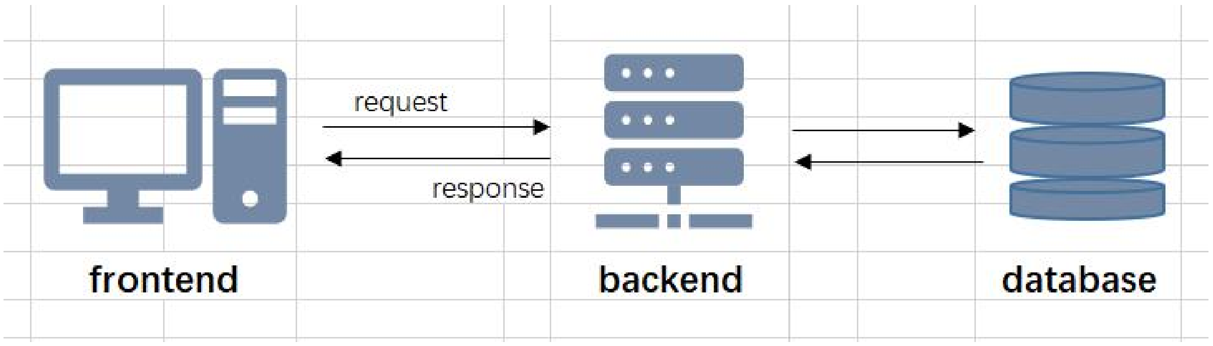
The general journey of taking orders in Smoober would be smooth and effective. First of all, user can browser products and add them to bag before being a member of the website. During this time, information about products’ will be shown, user can feel free to check and pick, no pressures from prices or taking too much time.

Secondly, after adding products in the bag, user is welcome to register in Smoober or sign in with Google accounts.

The final step is after signing in, press “pay” button. Once pay successfully, orders will be created immediately and user is allowed to pick the products before 16.30, the same day as the orders created.

In order to meet different users’ needs, Smoober plans to update the products information and add new products at the admin page. Please look forwards.

Architecture



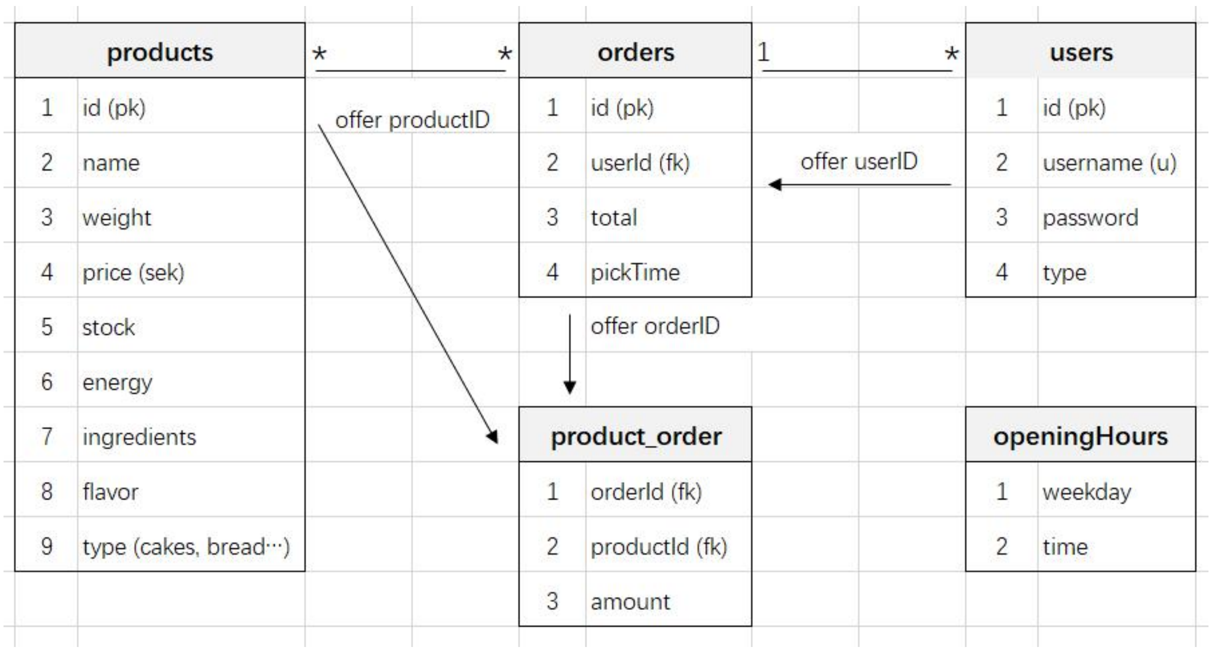
Smoober is consisting of three main parts, namely, frontend, backend and database.

In frontend, “app.vue” plays a key role as parent element. It is able to pass and get data from other child vue pages. After user signs in, user’s data will be sent to “app.vue”, so that user can keep sign in status before re-render the page. “app.vue” gets user’s data can also pass it down to other children, for instance, order page. Therefore, the user manages to check all the orders.

Frontend and backend communicates with each other via “Node.js”. Functions created in “Node.js” files, for example, “app.js”, will be implement in related vue file in frontend. While frontend sends HTTP request to backend, backend will try to fetch response and return it to frontend.

Backend and database communicate with Express. Express is one of the modules of “Node.js”, helping backend to talk with database.

Database



user table

- id, integer, primary key and automatically updated
- username, text, unique, between 3 to 9 characters
- password, text, no short than 9 characters
- type, integer, 1 = admin, 0 = common user, 2 = Google user

products table

- id, integer, primary key and automatically updated
- name, text, product name, between 5 to 30 characters
- weight, integer, unit is gram.
- price, integer, unit is Krona
- stock, integer, how many per each item that users are able to order online
- energy, integer, unit is Cal
- ingredients, text, for allergy issues, between 20 to 500 characters
- flavor, text, in case users get wrong by product photos
- type, text, for filtering, includes cakes, bread, cookies and desserts

orders table

- id, integer, primary key and automatically updated
- userId, foreign key
- total, integer, how much does one order cost in total
- pickTime, integer, unix timestamp, created by backend, an hour after order created

openingHours table

- weekday, integer, 1 = weekday, 0 = weekend
- time, text, open-time to close-time

product_order table, middle table

Since one order may have more than one product and one product can be included in many orders.

- orderId, integer, get value id from orders table
- productId, integer, get value id from products table
- amount, integer, the number of a certain single item that user bought

REST API

The API is an interface for communication between machine and machine, furthermore, Representational State Transfer API is a kind of web APIs and client can apply Create, Read, Update, Delete operations on resources. Smoober is a web application, so REST API is applied by this website.

At the frontend, there is a SDK to connect frontend and backend for implementing the CRUD operation. In other words, the SDK is responsible for sending HTTP request and deal with the corresponding response. So the whole file is exported into a module for page to use by importing.

User

Retrieve the Specific User (Read)
To retrieve the specific user's information, the GET method was used in the HTTP request and the URI is root path add "/user/the dynamic user's ID". If the specific user's information was fetched successfully, the data format in the body is JSON and the response status code would be "200". "404" means not found and "500" means backend error.

Register (Create)
For registering the new users at the Smoober website, the API was designed by using POST method to send request to root path add "/users/" URI with the new user's information by JSON. As long as dealing with these data properly at the backend application, the status code "201" and the new user's ID of Location in the header would be responded together. Otherwise, "400" and "422" mean invalid user or some other client errors, and "500" means some kind of backend errors.

Log in (Create)
If the user want to log in the website, the Sign In function would be triggered, which would use POST method send username and user's password by x-www-form-urlencoded data format to "/tokens/" URI that is a specific identifier for logging in. If the status code is "400", that would stand for invalid grant or wrong password. Or the status code "200" means success to match all information, and access token and ID token are received by JSON data format at the client side. After that the SDK imports the "jwt-decode" to decode the ID token and parse the information of this logged user because access token and ID token are kinds of JWT. Once the user logged completely, the window local storage variable access token would change into the user's access token, so when the user send any request, the header of HTTP request would set "Authorization: Bear and access token".

Third-Party Authentication (Create)
Smoober website also support third-party authentication, it means that the new user do not have to register the new account if he wants to bought things, he can directly use his Google account to sign in.

On the log in page, when the Google log in button is clicked, the page location would direct to the Google account authentication with scope, response type and smoober pre-registered information including client id, redirect URI. Once retrieving the authorization code successfully, the page would redirect to “redirect URI” with code in the URL. From the query string, the client can get the one time authorization code, then using POST method to send HTTP request to root path add “/storeauthode” by x-www-form-urlencoded data format. And the successful response is very similar with the normal sign in steps. But if the status code is “400”, maybe because it is failed to get the authorization code, while if the “500” is returned, authorization code would be invalid.

Orders

Generate Order (Create)

To generate the order for users, the POST method are used and the content of the specific order, including user id, products’ name, products’ id and total price would be in the body of request by JSON format. At last sending request to “/orders/” URI and waiting the response. If the order is inserted into the database completely, the response header would set user id in the location and status code “201” is returned. The page would directly jump to the user page. If the initial number of status code is “4”, it means the client side has some problems, especially “401” for unauthorized and “422” for invalid order. In addition, status code “500” says something wrong happened at the backend.

Retrieve the user’s order (Read)

For the user page, all of orders of the specific user should be printed out from before to after. The URI of this request would use query string, after “/orders/” URI using question mark and “userId=the particular id” to stand for the particular user’s orders. Same with the previous Read operation, using the GET method to fetch the orders. The status code “200” would take all orders that fulfilled the requirement by JSON data format to imply the success. But if the “500” is displayed, it means the internal server errors.

Products

Create Product (Create)

When the admin manages the products, he would have the authentication to create new products by submitting the form of creating the new product. By JSON stringifying these information and putting them into the request body, POSTing to “/products/” URI to create the product. The feedback status code “201” and “Location” in the response header tell the client new created product id. Status code “401” and “422” means the user does not have the right to create the product and submit invalid data type of the product. Same with the previous “500” situation, stands for the backend error.

All Products/ Product (Read)

The GET method is applied for retrieving all products or one of exact product, however, the difference only is the URI. “/products/” is for all products, while “/products/dynamic id” is for the specific product.

If the status code is “200”, the response would be parsed by JSON so that the views can display them. However, “404” and “500” say the specific product or products are not found and the backend errors.

Update Product (Update)

If the bakery improved the old style product, the admin also can change it on the website by sending PUT request to “/products/product id” URI with the new contents by JSON. The status code “204” means successful changed the specific product but no content send back. There may be some problems for client side, including “400” for bad request, “401” for unauthorized, “404” for not found, “422” for invalid product. And status code “500” supposes the backend errors.

Delete Product (Delete)

Same with the URI and response status code of Updating, but the method for this operation is DELETE. Sending the delete request to server for deleting this item.

Opening Hours

Get Opening Hours (Read)

At the service page, the opening hours are not static, so they need to be retrieved when the views are created. Using the GET method to send the request to the “/openhours/” URI and setting the accept into “application/xml” that means it only accept data in xml from response. Then when the status code is “200”, text function is used to response and then parsing them from XML into javascript object so that the data can be used furthermore. On the other hand, “500” expresses internal server errors.

Update Opening Hours (Update)

This classify is built to accommodate the changing season, the admin can modify the opening hours according to different situations. Entering into the admin page, and when save button is clicked, update opening hours API function is triggered at the same time. The content type is set into “application/xml”, which means the data format of body in the HTTP request is XML. In addition, PUT method with the body sends request to “/openhours/” URI. Returned status code “204” supposed success but no content. There may be some problems for client side, including “400” for bad request, “401” for unauthorized, “404” for not found, “422” for invalid product. And status code “500” supposes the backend errors.

Backend Application

At backend application, it is certainly to use the “Node.js” for realizing the REST API, but the raw language is a little bit redundant, so by importing Express framework to make it simpler and more efficient, especially the middleware function is very useful. Initially, the first middleware is used to enable Cross-Origin Resource Sharing, and then call next middleware to extract information from potential access token in the request. In addition, the next block imports “body-parser” and “body-parser-xml” middleware to parse the request body. Because Smoober website supports multiple data format, the “js-object-to-xml” middleware also is imported to modify the raw javascript data into XML format for response when the accept requirement of request is XML.

As for dealing with the different URI request, each classifiable data own itself router file that is import into main file called “app.js”. For example, if the URI is “/users/”, the response would be created in the “userRouter.js”. Besides that, it is worth to say the “thirdRouter.js” file. This file imports “googleapi”, “google-auth-library” webpackage to deal with the Third Party Authentication Code. By sending POST request to Google server to retrieve the ID token and verify it to get the Google account information. In all, It does not matter the third party users or original users also need to import “bcryptjs” and “jwt” to generate protected password or access token and ID token automatically.

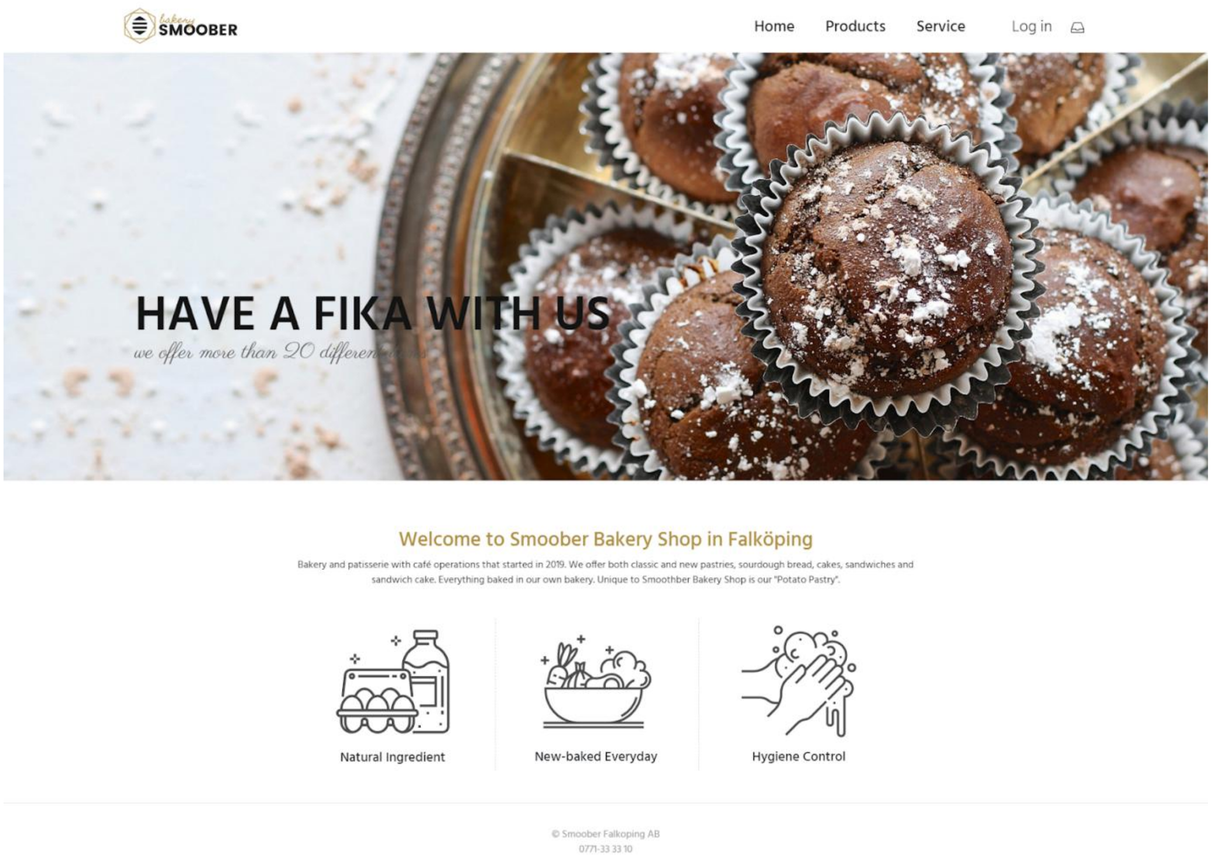
Lastly, “sqlite3” is required as the relational database. It is not special to implement the Create, Update, Read, Delete operations according to the statement. Besides that, the foreign key constraint and unique name constraint are opened to make sure that there is no invalid data inserted and no repeat name.

Frontend Application

In order to tell admin page apart from Smoober, website's header and footer get separated and work as components in this project. Another component called Clock, is only implement in admin page for bring some convenience to admin.

Smoober also contains bootstrap plugins and mainly used for table and alert messages' styles. The original Vue icon get replaced by Smoober's symbol, a small cupcake.

Product's images have fixed size and proportion to make sure the website look as good as possible. Hence, there is a default image for products which have no their own product images.



Welcome to Smoober Bakery Shop in Falköping

Bakery and patisserie with café operations that started in 2019. We offer both classic and new pastries, sourdough bread, cakes, sandwiches and sandwich cake. Everything baked in our own bakery. Unique to Smoothber Bakery Shop is our "Potato Pastry".

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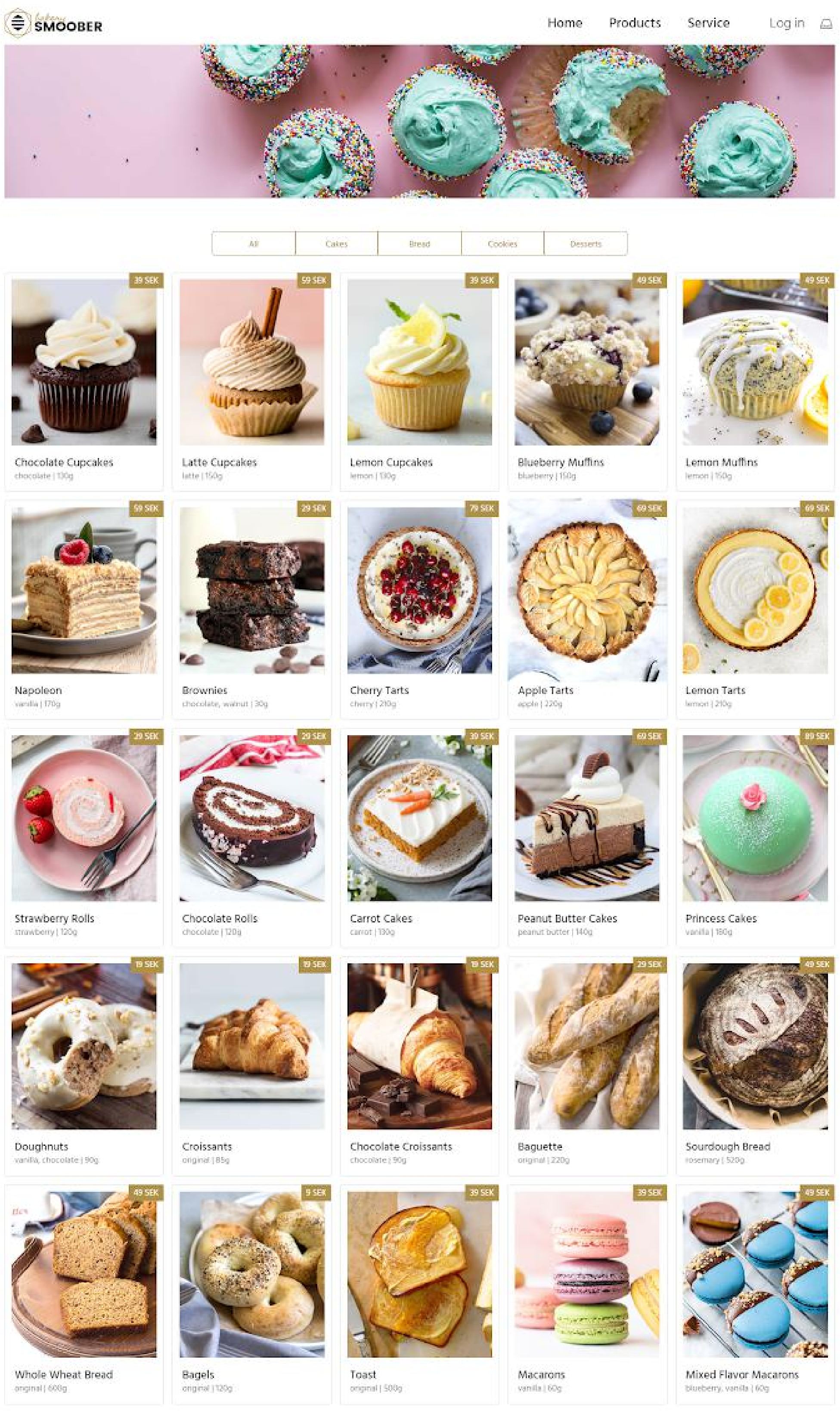
0771-33 33 10

Home page



39 SEK
Chocolate Cupcakes
chocolate | 130g

59 SEK
Latte Cupcakes
latte | 150g

39 SEK
Lemon Cupcakes
lemon | 130g

49 SEK
Blueberry Muffins
blueberry | 150g

49 SEK
Lemon Muffins
lemon | 150g

59 SEK
Napoleon
vanilla | 170g

29 SEK
Brownies
chocolate, walnut | 30g

79 SEK
Cherry Tarts
cherry | 210g

69 SEK
Apple Tarts
apple | 220g

69 SEK
Lemon Tarts
lemon | 210g

29 SEK
Strawberry Rolls
strawberry | 120g

29 SEK
Chocolate Rolls
chocolate | 120g

39 SEK
Carrot Cakes
carrot | 130g

69 SEK
Peanut Butter Cakes
peanut butter | 140g

89 SEK
Princess Cakes
vanilla | 180g

19 SEK
Doughnuts
vanilla, chocolate | 90g

19 SEK
Croissants
original | 85g

19 SEK
Chocolate Croissants
chocolate | 90g

29 SEK
Baguette
original | 220g

49 SEK
Sourdough Bread
rosemary | 520g

49 SEK
Whole Wheat Bread
original | 600g

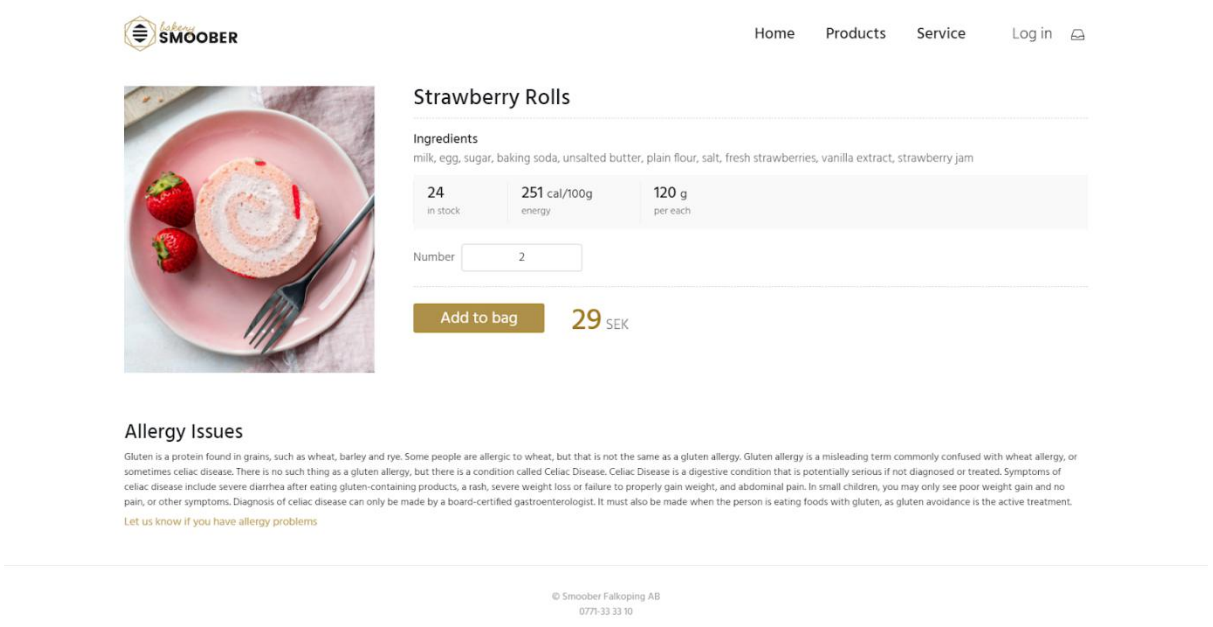
9 SEK
Bagels
original | 120g

39 SEK
Toast
original | 500g

39 SEK
Macarons
vanilla | 60g

49 SEK
Mixed Flavor Macarons
blueberry, vanilla | 60g

Products



Strawberry Rolls

Ingredients

milk, egg, sugar, baking soda, unsalted butter, plain flour, salt, fresh strawberries, vanilla extract, strawberry jam

24 in stock	251 cal/100g energy	120 g per each

Number 2

29 SEK

Allergy Issues

Gluten is a protein found in grains, such as wheat, barley and rye. Some people are allergic to wheat, but that is not the same as a gluten allergy. Gluten allergy is a misleading term commonly confused with wheat allergy, or sometimes celiac disease. There is no such thing as a gluten allergy, but there is a condition called Celiac Disease. Celiac Disease is a digestive condition that is potentially serious if not diagnosed or treated. Symptoms of celiac disease include severe diarrhea after eating gluten-containing products, a rash, severe weight loss or failure to properly gain weight, and abdominal pain. In small children, you may only see poor weight gain and no pain, or other symptoms. Diagnosis of celiac disease can only be made by a board-certified gastroenterologist. It must also be made when the person is eating foods with gluten, as gluten avoidance is the active treatment.

Let us know if you have allergy problems

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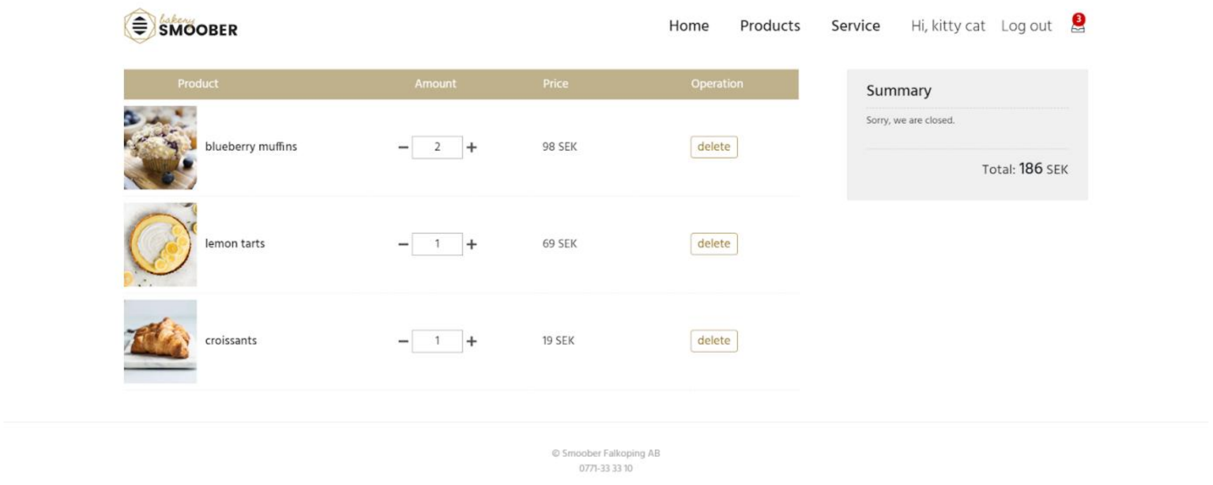
Product Details



Product	Amount	Price	Operation
blueberry muffins	2	98 SEK	delete
lemon tarts	1	69 SEK	delete
croissants	1	19 SEK	delete

Summary

Sorry, we are closed.

Total: 186 SEK

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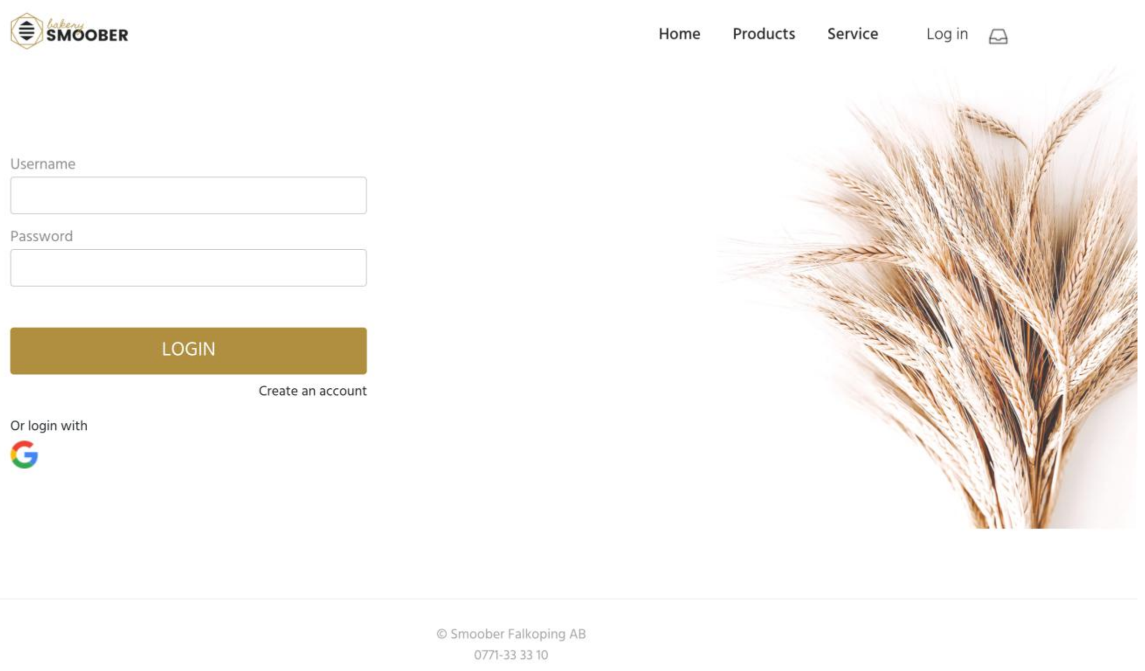
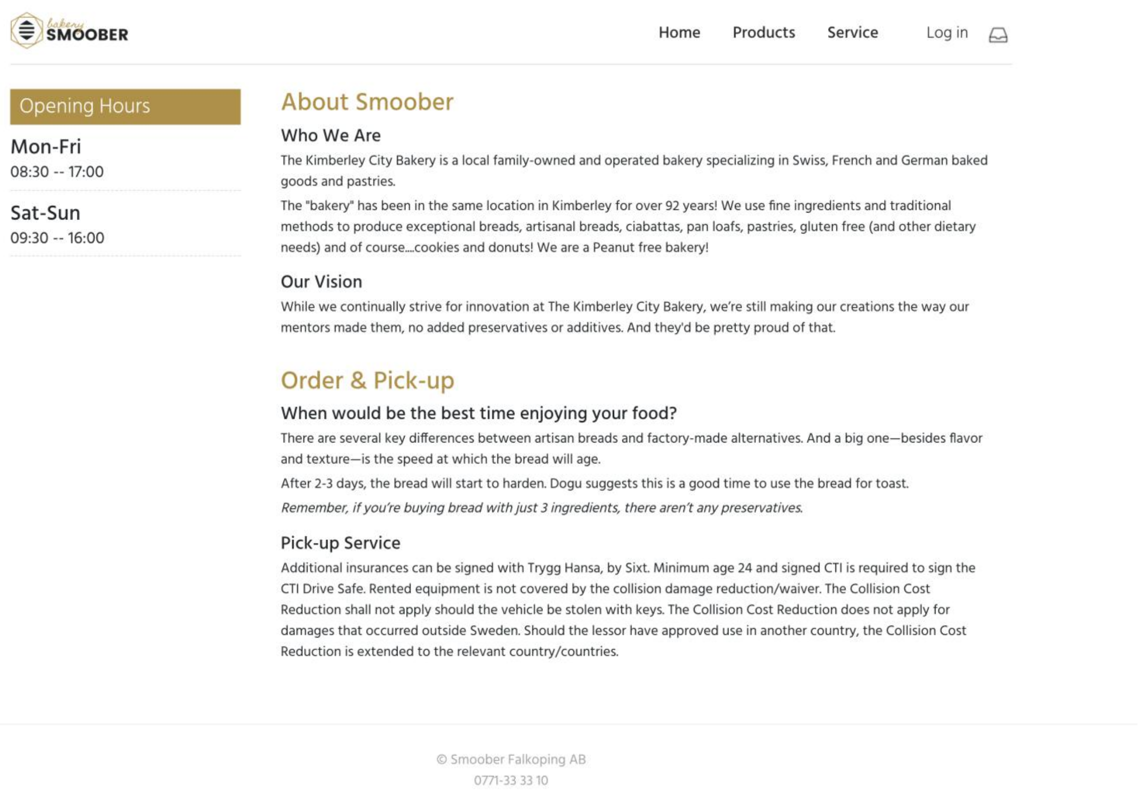
Bag (to pay)



Log in (sign up)



Opening Hours

Mon-Fri
08:30 -- 17:00

Sat-Sun
09:30 -- 16:00

About Smoober

Who We Are

The Kimberley City Bakery is a local family-owned and operated bakery specializing in Swiss, French and German baked goods and pastries.

The "bakery" has been in the same location in Kimberley for over 92 years! We use fine ingredients and traditional methods to produce exceptional breads, artisanal breads, ciabattas, pan loafs, pastries, gluten free (and other dietary needs) and of course....cookies and donuts! We are a Peanut free bakery!

Our Vision

While we continually strive for innovation at The Kimberley City Bakery, we're still making our creations the way our mentors made them, no added preservatives or additives. And they'd be pretty proud of that.

Order & Pick-up

When would be the best time enjoying your food?

There are several key differences between artisan breads and factory-made alternatives. And a big one—besides flavor and texture—is the speed at which the bread will age.

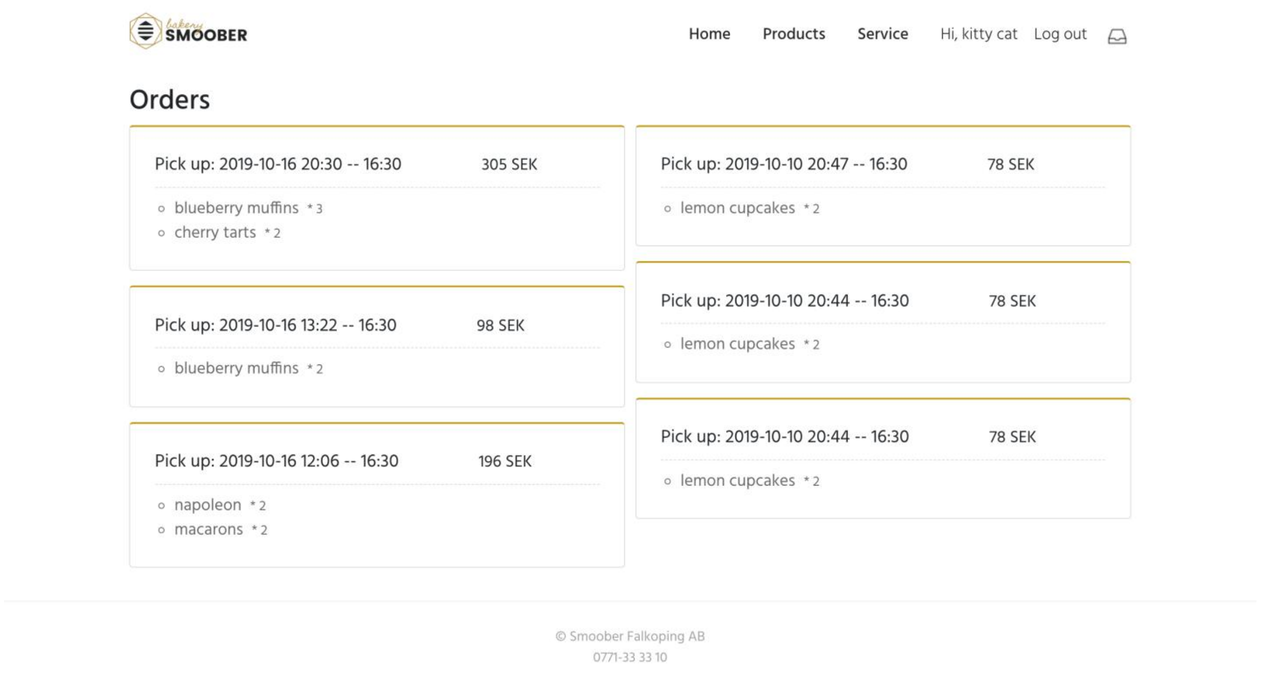
After 2-3 days, the bread will start to harden. Dogu suggests this is a good time to use the bread for toast.

Remember, if you're buying bread with just 3 ingredients, there aren't any preservatives.

Pick-up Service

Additional insurances can be signed with Trygg Hansa, by Sixt. Minimum age 24 and signed CTI is required to sign the CTI Drive Safe. Rented equipment is not covered by the collision damage reduction/waiver. The Collision Cost Reduction shall not apply should the vehicle be stolen with keys. The Collision Cost Reduction does not apply for damages that occurred outside Sweden. Should the lessor have approved use in another country, the Collision Cost Reduction is extended to the relevant country/countries.

Service



Orders

Pick up: 2019-10-16 20:30 -- 16:30 305 SEK
- blueberry muffins * 3
- cherry tarts * 2

Pick up: 2019-10-16 13:22 -- 16:30 98 SEK
- blueberry muffins * 2

Pick up: 2019-10-16 12:06 -- 16:30 196 SEK
- napoleon * 2
- macarons * 2

Pick up: 2019-10-10 20:47 -- 16:30 78 SEK
- lemon cupcakes * 2

Pick up: 2019-10-10 20:44 -- 16:30 78 SEK
- lemon cupcakes * 2

Pick up: 2019-10-10 20:44 -- 16:30 78 SEK
- lemon cupcakes * 2

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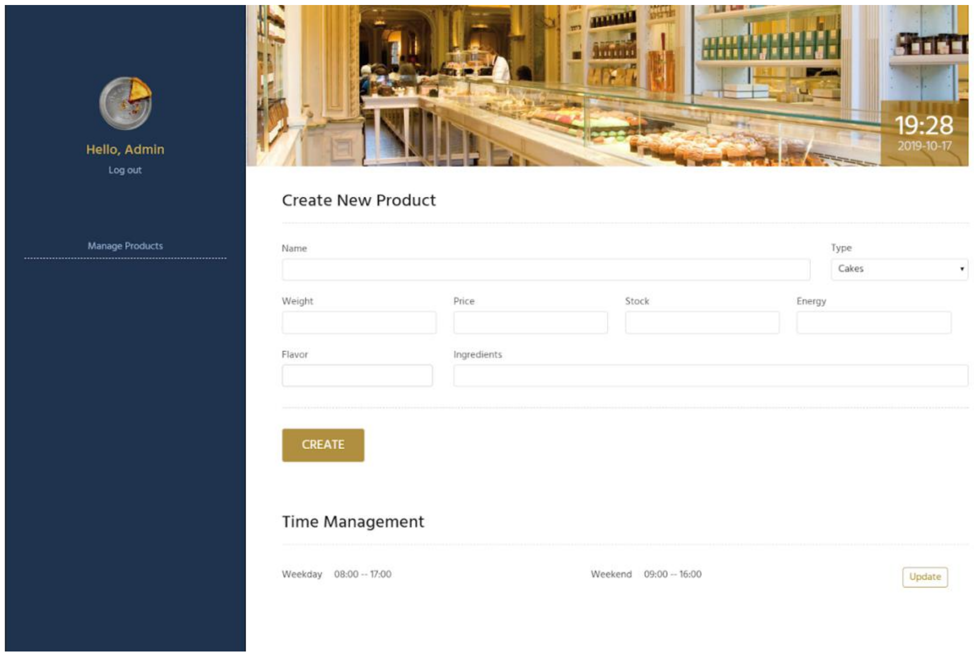
User page (histories)



Create New Product

Name

Type: Cakes

Weight

Price

Stock

Energy

Flavor

Ingredients

Time Management

Weekday 08:00 -- 17:00

Weekend 09:00 -- 16:00

Admin