

Fullstack [Pricing]



Hello, if you're reading this, then we think you could be a good fit for team FOBOH. Thank you for taking the time to complete this challenge and we hope to talk with you soon!

About the challenge

We designed this take-home exercise to give you a feel for the challenges you may encounter in the role, and to understand what it would be like to work together. Rather than assess you on algorithmic knowledge or ask you to complete esoteric coding puzzles, we've designed this exercise to resemble the work you would do as a software engineer working with team FOBOH and get a sense of how you build great software.

Guidelines

- We also know you're busy, and that's why this exercise should take no more than **3-4 hours** of dedicated, focus work to complete.
- Think of this like an open source project. Create a repo on Github, use git for source control, and use README.md to document what you built for the newcomer to your project.
- Think out loud in your submission's documentation. Document tradeoffs, the rationale behind your technical choices, or things you would do or do differently if you were able to spend more time on the project or do it again.

The CHALLENGE (if you choose to accept)

You will develop a feature within the pricing module that allows suppliers to add and remove products from the profile and adjust the price.

Your task for this challenge is to create a pricing feature comprising of two parts, a browser-based user interface in React that makes requests to node.js backend.

Your submission will be evaluated for conforming to the specifications outlined below as well as code quality (maintainability, scalability, performance, responsiveness etc.) and overall usability.

Requirements

As a supplier using FOBOH, I want to offer bespoke product prices to different customers, so that I can tailor my offer and maximise margin for customers.

Prerequisites

- user is logged into FOBOH
- user has completed onboarding and setup their product range and customer base (can be modified later)
- user has the requirement to offer customer(s) products pricing which differs to the global list price
- user has completed step 1. create basic profile info

Select products from range and adjust prices

As a supplier, I want to be able to add products to a pricing profile by filtering them based on category, subcategory, segment, or brands, so that I can adjust their prices by either a percentage or dollar amount or a custom change.

- ✓ Detailed requirements

Steps:

1. **Identify products** user can create a price profile for one, many, or all products

a. For one or many products, user can either:

Search: ability to search by Product Title, SKU or;

- fuzzy matching
- query parsing
- wildcard

Filter: ability to filter by Category, Sub-Category, Segment, Style (wine-specific only where a supplier has wine products in their range), Brand.

b. Or the user can build the pricing profile for all products in their range.

i where a product has NOT been selected for the pricing profile the default wholesale global price will be used. This should be clear to the user.

2. **Select product** user can then select the relevant products they want to modify the prices for.

a. For one or many products, user can select (and unselected) the products they want to build the profile for.

b. For all products, the user will simply select all (and unselected all as required).

3. Apply new pricing

Based on....

User can first select the price profile that they want to base the new pricing off if they want the new price profile to inherit pricing from the “Based on” profile. This will default to the global wholesale price and would then include any other pricing profiles the user has already created.

Next, the user will indicate whether the price adjustment will be:

- fixed (\$) or dynamic (%) and;
- an increase  or decrease 

The adjusted price will be calculated from the “Based on” profile selected above.

Examples:

if the newly created “tenure discount” pricing profile is based on the “global wholesale price” and discounted by 10% across all products, the product prices in your pricing profile will be 10% cheaper than the “global wholesale price”

Adjustment type	Fixed or dynamic	Value	“Based on” profile price	New profile price
Decrease	Dynamic	10%	\$45.00	\$40.50
Increase	Fixed	\$2	\$45.00	\$47.00

Recalculate prices interaction which will apply the changes to the selected product range and showcase the Based on and new prices.

User Interface

The user interface should be a browser-based application using React. Feel free to leverage a CSS framework to build a simple and functional user interface.

User should be able to:

- search and filter products based on various criteria such as title, SKU, category, subcategory, etc. > integrate with backend API to fetch product info
- select/unselect products for a pricing profile, including the ability to select all products
- choose adjustment types (fixed/dynamic), and specifying adjustment values
- view the “Based on” price
- apply new pricing adjustments and display the calculated prices before applying changes

Hello, Ekemini
Tue, 13 February 2024

Dashboard Orders Customers Products Pricing Freight Integrations Settings

Pricing Profile > Setup a Profile

Setup your pricing profile, select products and assign customers

Cancel Save as Draft

Basic Pricing Profile

Cheeky little description goes in here

Completed

Make Changes

Select Product Pricing

Set details

You are creating a Pricing Profile for

One Product Multiple Products All Products

Search for Products

Search Product / SKU Category Segment Brand

Showing (6 Result) for (Product Name or SKU Code) (Brand) (Brand)

Deselect All Select all

- HN Half Day Hazy SKU 903222100KT 12 x 375ML Can Case
- Crumb Cookies SKU 903222100KT 12 x 375ML Can Case
- Crumb Cookies SKU 903222100KT 12 x 375ML Can Case
- HN Half Day Hazy SKU 903222100KT 12 x 375ML Can Case
- Necessaire SKU 903222100KT 12 x 375ML Can Case

You've selected 3 Products, these will be added [Profile Name]

Based on

Global Wholesale Price

Set Price Adjustment Mode

Fixed (\$) Dynamic (%)

Set Price Adjustment Increment Mode

Increase + Decrease -

The adjusted price will be calculated from Global Wholesale Price selected above

Refresh New Price Table

Product Title	SKU Code	Category	Global Wholesale Price	Adjustment	New Price
HN Half Day Hazy	SKU or UOM	Wine	\$45.00	-\$ 5.00	\$40.00
Crumb Cookies	SKU or UOM	Wine	\$45.00	-\$ 5.00	\$40.00
Necessaire	SKU or UOM	Wine	\$45.00	-\$ 5.00	\$40.00

Your entries are saved automatically

Back Next

Assign Customers to Pricing Profile

Choose which customers this profile will be applied to

Not Started

Field name	Description	UI Element	Options
You are creating a pricing profile for	Product selection type	Radio button	One Product Multiple Products All Products

Search for Products	Ability to search by Product Name or SKU code	Search bar	
Filter: category > sub-category	Ability to select products based on their Sub-category	Dropdown	Sub-category: Wine Beer Liquor & Spirits Cider Premixed & Ready-to-Drink Other
Filter: segment	Ability to select products based on their Segment	Dropdown	Red White Rose Orange Sparkling Port/Dessert
Filter: brand	Ability to select products based on their Brand	Dropdown	High Garden Koyama Wines Lacourte-Godbillon
Return product results based on search or filter options			
Based on	This determines what the “Base On Price” will be.	Dropdown	Global wholesale price
Set Price Adjustment Mode	Determines “Adjustment” column. IF Fixed, then make Adjustment: \$ _____	Radio button	Fixed (\$) Dynamic (%)

	IF Dynamic, then make Adjustment: _____ %		
Set Price Adjustment Increment	Determines calculation of "New Price" IF Increase, use "+" as operator IF Decrease, use "-" as operator	Radio button	Increase + Decrease -

Calculation of New Price

We need to make sure that the resulting price changes brought about by setting up of the Price Profile is accurate. Here are the formulas for calculating the New Price depending on the selected options:

Given the following data

Based On Price: AUD 500.00

Adjustment: 20

Price Adjustment: Fixed

$$[\text{Based On Price}] [\text{Operator}] [\text{Adjustment}] = [\text{New Price}]$$

1. Increment is Increase

$$\$ 500.00 + \$ 20.00 = \$ 520.00$$

2. Increment is Decrease

$$\$ 500.00 - \$ 20.00 = \$ 480.00$$

Price Adjustment: Dynamic

$$[\text{Based On Price}] [\text{Operator}] [[\text{Adjustment}]*[\text{Based On Price}]] = [\text{New Price}]$$

1. Increment is Increase

$$\$ 500.00 + (20\% \text{ of } \$ 500.00) = \$ 600.00$$

2. Increment is Decrease

$$\$ 500.00 - (20\% \text{ of } \$ 500.00) = \$ 400.00$$

⚠️ Keep in mind that we are calculating for price so make sure that it will not result in negative numbers.

Product results table

Product Title	SKU Code	Category	Based On Price	Adjustment	New Price

Backend

- no need to create actual database, can be as simple as in-memory database or in-memory objects as long as proper types and validation in place somewhere.
- business logic to apply pricing adjustments based on the selected pricing profile - calculate adjusted prices based on percentage or fixed amount changes from the “based on” price
- CRUD endpoints for managing pricing profiles, and pricing adjustments
- CRUD endpoints for managing products is optional (you can start by a seed of products)
- api needs to be exposed using swagger/openapi

Sample data

title	skUcode	brand	categoryID	subCategoryID	segmentId	Global wholesale price
High Garden Pinot Noir 2021	HGVPIN216	High Garden	Alcoholic Beverage	Wine	Red	279.06
Koyama Methode	KOYBRUNV6	Koyama Wines	Alcoholic Beverage	Wine	Sparkling	120

Brut						
Nature NV						
Koyama Riesling 2018	KOYNR183 7	Koyama Wines	Alcoholic Beverage	Wine	Port/Desse rt	215.04
Koyama Tussock Riesling 2019	KOYRIE19	Koyama Wines	Alcoholic Beverage	Wine	White	215.04
Lacourte-Godbillon Brut Cru NV	LACBNAT NV6	Lacourte-Godbillon	Alcoholic Beverage	Wine	Sparkling	409.32

Deliverables

Submit your challenge to info@foboh.com.au, provide a link to the git repo and the URL to the application within 3 business days.

You should also include a README with any instructions. Tests are not mandatory but will be considered bonus points if you provide them.

It is not expected to be a production ready application and will not be evaluated in such a context.