

# Sharebite Coding Challenge

## Backend Challenge

**Task: Create API for Menu Builder**

**Task Duration: 1 hour, 30 minutes**

In this task, you will create APIs for a Menu Builder Application. The frontend, which calls these APIs, could be something as depicted below.

| Menu Sections <span>Add</span> | Items <span>Add</span>  | Modifiers <span>Add</span> |
|--------------------------------|-------------------------|----------------------------|
| Lunch Specials                 | Sandwich Lunch          | Extra Spicy                |
| Dinner Specials                | Soup Lunch              | Regular Spice              |
|                                | Half Sandwich Half Soup | No Spice                   |
|                                |                         |                            |

A Standard Menu on the platform consists of the following three entities:

1. Section
2. Item
3. Modifiers

### Section

1. A section is a grouping of one or more Items
  - The section must have an id, name, and description.
  - Examples of sections on the platform are "Lunch Specials", "Daily Specials", "Salads", etc.

### Item

1. An Item is what you order in a menu
  - An Item has must have an id, name, description, and price.
  - An item must belong to a section.
  - An Item can be part of only one section.
  - An example of an Item is "Cheese Pizza", "Chicken Sandwich", etc.

### Modifiers

1. Modifiers are sides, toppings, sauces or other options for an Item
  - Modifiers have an id and description.
  - A Modifier can belong to many items.
  - An example of a modifier is "Sauce on the side", "No spice", etc.

The ER Diagram above shows the relationship between these three entities.

## Requirements

1. Programming Language Python / Javascript
2. Framework - No restrictions
3. Database - MySQL (or any relational database)

## What to build

1. http rest endpoints to perform CRUD operations on these entities:
  - a. Section
  - b. Item
  - c. Modifiers
2. http rest endpoint to map Items and Modifiers
3. http rest endpoint to get the entire restaurant menu. The response from the endpoint must be structured as below

```
[
  {
    "id":1,
    "title":"Lunch Specials",
    "items":[
      {
        "id":1,
        "title":"Soup Lunch",
        "modifiers":[
          {
            "id":1,
            "title": "Extra Spicy"
          },
          {
            "id":2,
            "title": "Regular Spice"
          },
          {
            "id":3,
            "title": "No Spice"
          }
        ]
      }
    ]
  }
]
```

Create a repository on Github or BitBucket for your project and reply to the assessment email with the link to your repository.

Please feel free to write to [tech@sharebite.com](mailto:tech@sharebite.com) if you have any further questions.

Thank You,  
Sharebite

### Task: Create a Menu Editor

**Task Duration: 2 hours, 30 minutes**

You are tasked to build the front-end for restaurants to create menus. A typical restaurant menu has the following structure:

Sections (eg: *Lunch Specials, Dinner Specials*)  
Items (eg. *Chicken Over Rice, Lamb With Salad*)  
Item Options (eg: *Grain, Vegetable*)  
Option Choices (eg: *Brown Rice, White Rice*)

Menu Structure in JSON format:

```
{
  "sections": [
    {
      "name": "Lunch Specials"
      "items": [
        {
          "title": "Chicken Over Rice",
          "price": 12,
          "options": [
            {
              "name": "Add Rice",
              "choices": [
                {
                  "name": "White Rice",
                  "price": 2
                },
                {
                  "name": "Brown Rice",
                  "price": 2
                }
              ]
            }
          ]
        }
      ]
    }
  ]
}
```

The menu editor you create must have the following functionality:

1. Create new Menu Sections, Section Items, Item Options, and Item Option Choices
2. Visually and logically represent the menu hierarchy:
  - The page should be divided into 4 columns to represent the 4 levels of the menu hierarchy.
  - The 4 columns should have a header containing either "Menu Sections", "Items", "Choices", or "Options", and a button to add a new entry to that column (**Figure 1**).
  - In the column view, menu sections, section items, item options, and item option choices should be represented as "cards".
  - "Cards" should be selectable by click
  - When a card is selected, the information in the menu viewer should show all information that is lower in the object hierarchy than the selected card.
    - ie. Selecting a menu section card should show its section items in the "Section Items" column. Selecting a section item should show its item options in the "Item Options" column. Selecting an item option should show its item option choices in the "Item Option Choices" column.

Notes:

1. Any frontend framework can be used
1. Backend APIs are not required
1. Persisting data and loading pre-existing menu data is not required.

| Menu Sections <span>Add</span> | Items <span>Add</span>  | Item Options <span>Add</span> | Option Choices <span>Add</span> |
|--------------------------------|-------------------------|-------------------------------|---------------------------------|
| Lunch Specials                 | Sandwich Lunch          | Soup Flavor                   | Soup of the day                 |
| Dinner Specials                | Soup Lunch              | Side                          | Minestrone                      |
|                                | Half Sandwich Half Soup |                               | Broccoli and Cheddar            |
|                                |                         |                               |                                 |

Figure 1: Example UI

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