

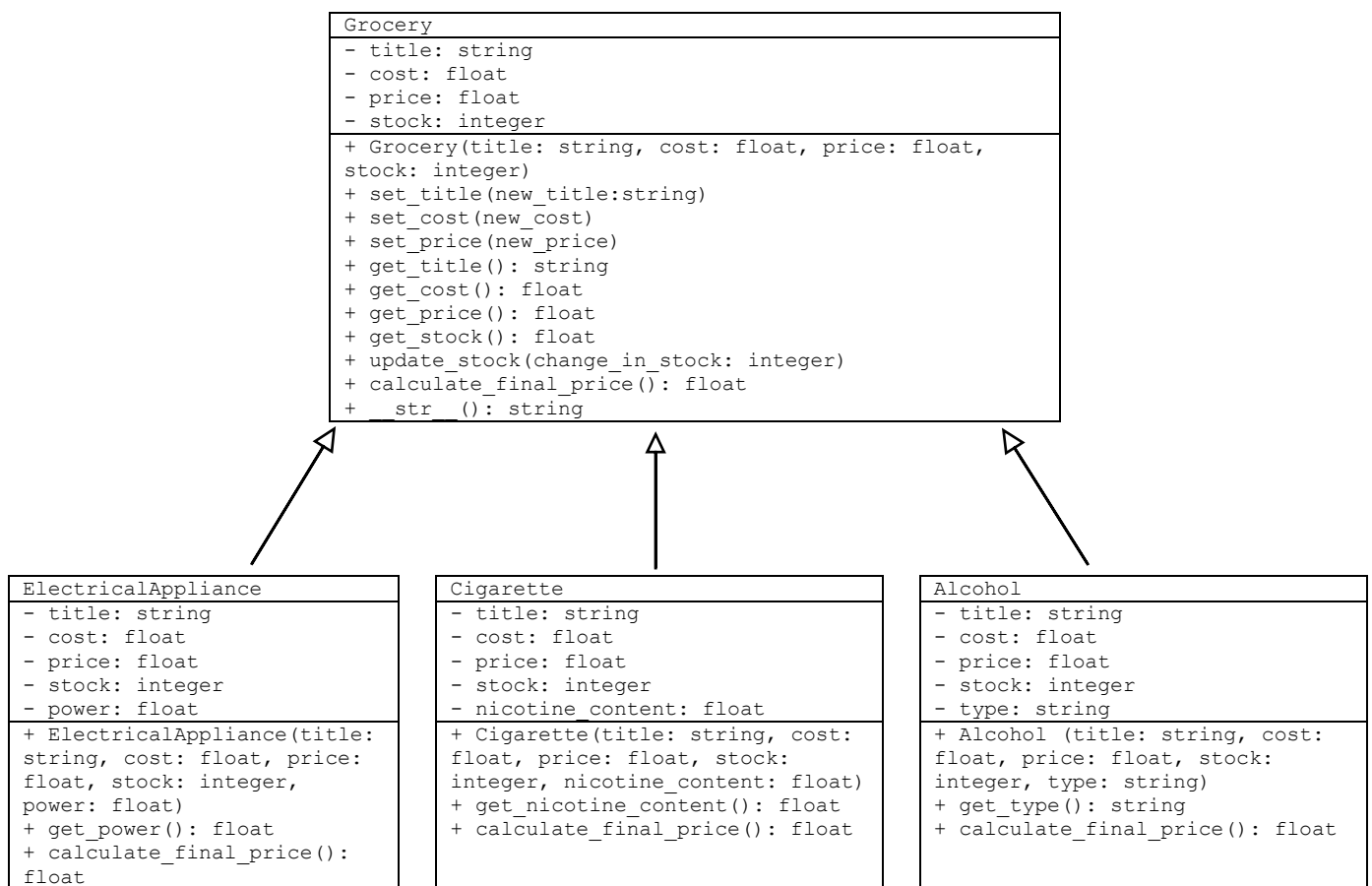
# Grocery Store Manager

The grocery shop in the neighborhood ask your help to create an application to manage the grocery store.

First, you are tasked to work on an object-oriented solution to store all the grocery details. The `title` of the grocery item, `cost`, `price` and `stock` of each grocery is recorded. Besides the normal groceries, the shop identifies three unique types of grocery too, namely:

- Electrical Appliance: there is a need to indicate the `power` of the product to understand its energy consumption rate.
- Cigarette: it is important to track the `nicotine content` of various kinds of cigarette.
- Alcohol: there are distinct `types` of alcohols such as wine or beer.

Below is an UML class diagram for your reference.



### Task 5.1

Implement the classes of `Grocery`, `ElectricalAppliance`, `Cigarette` and `Alcohol` with object-oriented programming based on the above UML class diagram.

### Task 5.2

In country S, purchasing all groceries will incur a 7% Goods and Services Tax(GST).

To promote healthy living, additional tax have been imposed to cigarettes and alcohols:

- Cigarette: additional 60% tax
- Wines: additional 50% tax
- Beers: additional 20% tax

*For example: the price of one packet of “Yun Yan” cigarette is \$23.00, the final price can be calculated by:  $\$23.00 \times 160\% \times 107\% = \$39.38$*

In addition, to support the “save energy movement”, all electrical appliance with a power less than or equals to 10Watt was set to be sold at 80% of its original price.

Implement the function `calculate_final_price()` which includes the above mentioned tax and promotion into consideration.

Implement the `__str__()` function which returns a string in the following format (You may refer to the `test_function_5_1()` to understand the formatting):

Title	Cost	Price	Stock	Final Price
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For example, Yun Yan’s cost is \$16.50, price is set at \$23.00, the current stock is 4 and final price is \$39.38. The `__str__()` function should return the following string:

Yun Yan	\$ 16.50	\$ 23.00	4	\$ 39.38
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### Task 5.3

Implement a class `StoreManager` which keep track of a list of grocery items, `curr_item_list`. The `StoreManager` should have the following class functions:

Function	Description
<code>sell_item(sold_item)</code>	<p><code>sold_item</code> is a tuple containing 2 elements: the <code>title</code> of the item and the <code>quantity</code> sold. You may assume the title of item is always valid and the quantity sold is always smaller than the current stock.</p> <p>The function should decrease the current stock of the sold items. Upon completion, it should print out a string containing the following information:</p> <pre>Title   Unit Price   Quantity Sold   Subtotal</pre> <p>The function should return a float containing the <code>sub_total</code> value.</p>
<code>sell_items(sold_item_list)</code>	<p><code>sold_item_list</code> is a list of tuples; each tuple containing the item <code>title</code> and <code>quantity</code> sold.</p> <p>The function should print out a table displaying information for all sold items in the following format:</p> <pre>Title   Unit Price   Quantity Sold   Subtotal</pre> <p>The summary should end with a line indicating the overall total value of items sold in this transaction.</p>
<code>stock_check()</code>	<p>When this function is called, it should check the list of all grocery items and print out a summary of items with current stock value below 5. This indicates the need for stocking up these items soon.</p> <p>A summary table should be printed in the following format:</p> <pre>Title   Unit Cost   Quantity Left</pre>