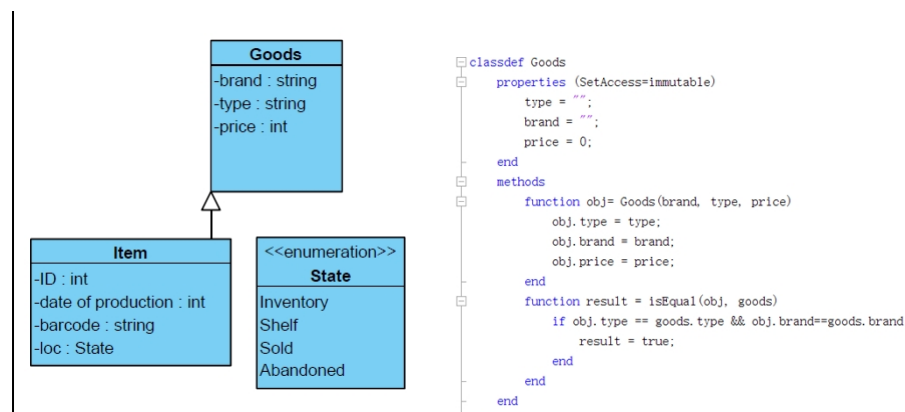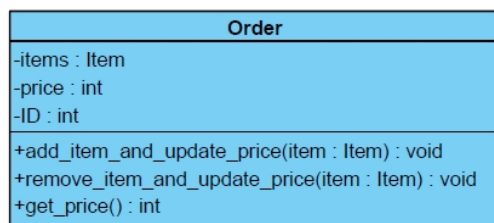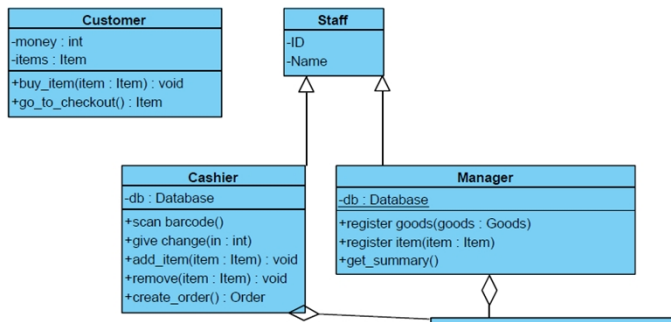These three System function are implemented successfully. Customer could buy items while database and cashier system dealing with the data of the items. And customer and cashier could generate summary after buying the items. Also, there are some interface for manager to register items.

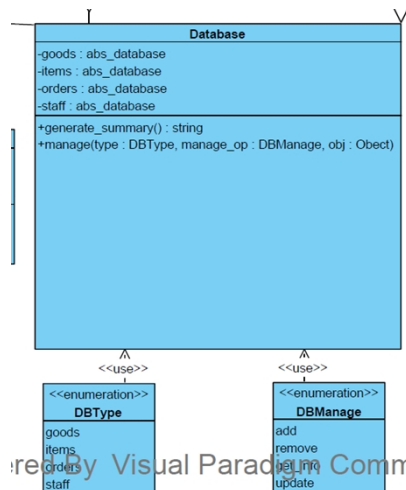These two class are specified in src\Goods.m and src\Item.m

Specified in srd\Order.m

Customer
-money : int
-items : Item
+buy_item(item : Item) : void
+go_to_checkout() : Item

Staff
-ID
-Name

Cashier
-db : Database
+scan barcode()
+give change(in : int)
+add_item(item : Item) : void
+remove(item : Item) : void
+create_order() : Order

Manager
-db : Database
+register goods(goods : Goods)
+register item(item : Item)
+get_summary()

Cashier and Manager are implemented in src\Cashier.m and src\Manager.m

```
function obj = create_order(obj)
    obj.order_count = obj.order_count + 1;
    obj.order = Order(obj.order_count);
end
function obj = addItem(obj, item)
    % call the function in Order
    obj.order.add_item_and_update_price(item);
    return;
end
function obj = removeItem(obj, item)
    % call the function in Order
    obj.order.remove_item_and_update_price(item);
    return;
end
function obj = writeOrderBackToDatabase(obj)
    obj.db.writeOrder(obj.order);
    % TODO: save data
    return;
```

Database
-goods : abs_database
-items : abs_database
-orders : abs_database
-staff : abs_database
+generate_summary() : string
+manage(type : DBType, manage_op : DBManage, obj : Obect)

```
classdef Database
    properties
        db_goods;
        db_goods_count;
        db_items;
        db_orders;
        db_orders_count;
        db_staff;
    end
    methods
        function obj= Database()
            if `exist('data','dir')
                mkdir('data')
            end
            if exist('data/cashier_db.mat','file')
                load 'data/cashier_db.mat' obj
            else
                % init
```

<<enumeration>>
DBType
goods
items
orders
staff

<<enumeration>>
DBManage
add
remove
get_info
update

In src\Database.m. The *count properties are needed for container.

```
            %save 'data/cashier_db.mat' obj
        end
        function writeData(obj)
            save 'data/cashier_db.mat' obj;
        end
        function addGoods(obj,brand, type, price)
            obj.db_goods_count = obj.db_goods_count + 1;
            obj.db_goods(obj.db_goods_count) = Goods(brand, type, price);
        end
        function removeGoods(obj,brand, type, price)
            % TODO
            obj.db_goods_count = obj.db_goods_count + 1;
            obj.db_goods(obj.db_goods_count) = Goods(brand, type, price);
        end
        function get_infoGoods(obj)
            % TODO
```

There are some other function for Database class to write data, which may be used by other class such as Manager or Cashier to operation on database of goods and item.

Customer could buy items through this UI interface. More details are in User Manual.
Manager UI is ready