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Program: **Very Basic Invoice Model Example.**

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**Requirements:**

* Code a model for an invoice that:
  + Store the following information:
    - The quantity sold for each product
    - The total amount of the invoice
    - The client information
    - The company information.
  + Simulate storing this information into a database.
* Write unit tests using unittest to test the implementation.
* The implementation will use Python 3.8.

**To test the implementation:**

You can just go to the project folder, i.e., erp\_invoice\_model and execute the command:

$ python -m unittest

That should end this way:

…

Ran 18 tests in 0.006s

OK

**Analysis:**

I have decided to structure the project in five main module-packages (add-ons):   
 base, account, contacts, product and sale.

Each main module-package (add-on) will have two packages: models and tests.  
The main module account will implement the classes AccountInvoice and AccountInvoiceLine.

The main module base will create a dummy class DBDriver to connect and write to a fictional database.

The main module sale will implement the classes SaleInvoice and SaleInvoiceLine.  
They will be subclasses of AccountInvoice and AccountInvoiceLine from the account module .

The main tests are in the main module account, inside *test\_account\_invoice.py* and the main module sale, in *test\_sale\_invoice.py*

**In more detail:**

* account
  + models
    - *account\_invoice.py*  
      Implements the model *account\_invoice*.  
      Classes: AccountInvoice, AccountInvoiceLine, AccountInvoiceType and AccountInvoiceException.  
      It’s not intended to be used directly. Instead, its classes are intended to be used through the subclass module *sale* (and a future module *purchase*).
  + tests
    - *test\_account\_invoice.py*  
      Here are the main tests for all the functionality of the invoices.
* base
  + models
    - *db\_driver.py*  
      Implements a dummy model *db\_driver*.  
      Classes: DBDriver.
  + tests
    - *test\_db\_driver.py*
* contacts
  + models
    - *contact.py*
  + tests
    - *test\_contact.py*
* product
  + models
    - *product.py*
  + tests
    - *test\_product.py*
* sale
  + models
    - *sale\_invoice.py*  
      Implements the model *sale\_invoice*.  
      Classes: SaleInvoice and SaleInvoiceLine .  
      These classes inherit AccountInvoice and AccountInvoiceLine from the *account* module.  
      SaleInvoice puts the attribute invoice\_type to AccountInvoiceType .OUT and adds the string 'INV/OUT/' to the field *invoice\_id*.
  + tests
    - *test\_sale\_invoice.py*  
      This module adds some tests for the characteristics added to sale invoices.  
      Although, the main tests for invoices are in the module *test\_account\_invoice.py.*