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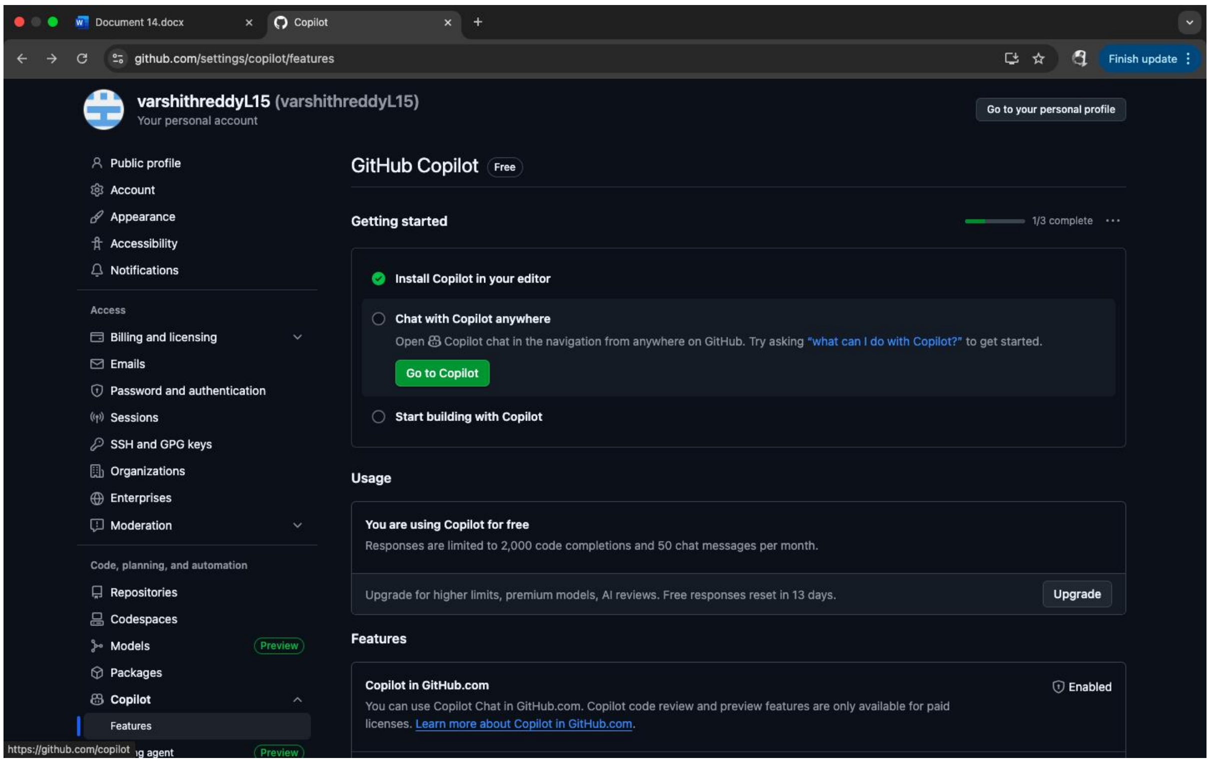
Objective: To explore AI-powered code assistants for writing Python classes, constructors, and methods through intelligent suggestions.

Suppose that you are hired as an intern at a tech company that develops inventory management systems. Your manager asks you to create a Product class and a Warehouse class with some basic methods. You have decided to use AI-powered code
suggestions to help speed up development and reduce syntax errors.



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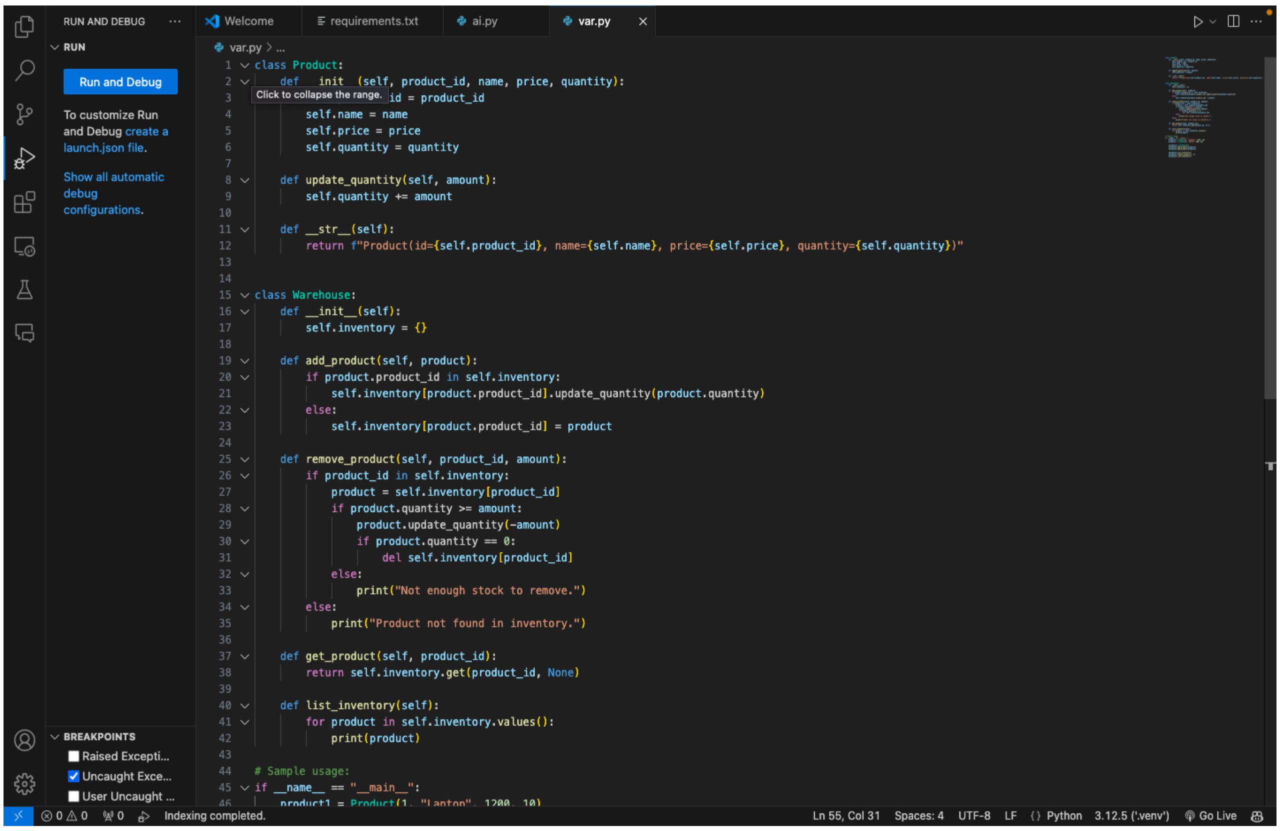
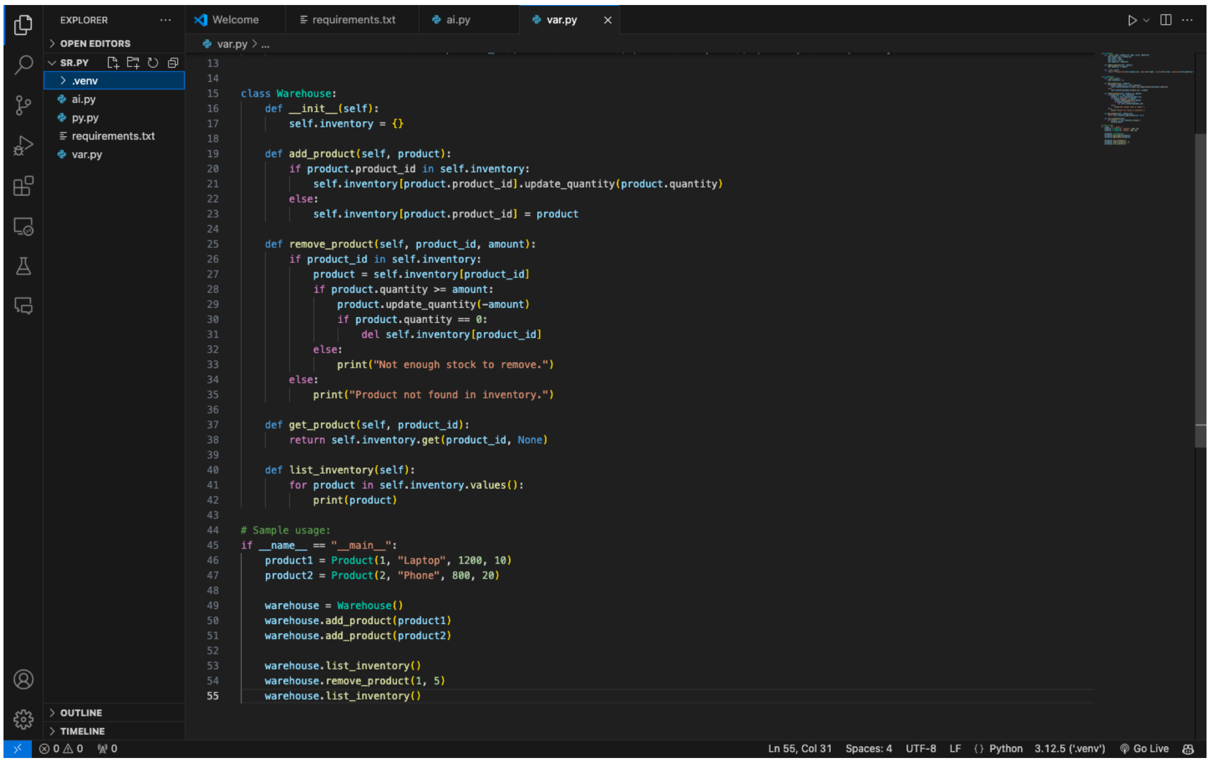
PROMPT:

Write a code that you are hired as an intern at a tech company that develops inventory management systems. Your manager asks you to create a Product class and a Warehouse class with some basic methods. You have decided to use AI-powered code
suggestions to help speed up development and reduce syntax errors.


RUN AND DEBUG
RUN
Run and Debug
To customize Run and Debug create a launch.json file.
Show all automatic debug configurations.
BREAKPOINTS
Raised Excepti...
Uncaught Exce...
User Uncaught ...
Welcome
requirements.txt
ai.py
var.py
var.py > ...
Click to collapse the range.
0 0 0 Indexing completed.
Ln 55, Col 31 Spaces: 4 UTF-8 LF {} Python 3.12.5 ('.venv') Go Live

```python
class Product:
    def __init__(self, product_id, name, price, quantity):
                               id = product_id
        self.name = name
        self.price = price
        self.quantity = quantity

    def update_quantity(self, amount):
        self.quantity += amount

    def __str__(self):
        return f"Product(id={self.product_id}, name={self.name}, price={self.price}, quantity={self.quantity})"


class Warehouse:
    def __init__(self):
        self.inventory = {}

    def add_product(self, product):
        if product.product_id in self.inventory:
            self.inventory[product.product_id].update_quantity(product.quantity)
        else:
            self.inventory[product.product_id] = product

    def remove_product(self, product_id, amount):
        if product_id in self.inventory:
            product = self.inventory[product_id]
            if product.quantity >= amount:
                product.update_quantity(-amount)
                if product.quantity == 0:
                    del self.inventory[product_id]
            else:
                print("Not enough stock to remove.")
        else:
            print("Product not found in inventory.")

    def get_product(self, product_id):
        return self.inventory.get(product_id, None)

    def list_inventory(self):
        for product in self.inventory.values():
            print(product)

# Sample usage:
if __name__ == "__main__":
    product1 = Product(1, "Laptop", 1200, 10)
```



```python


class Warehouse:
    def __init__(self):
        self.inventory = {}

    def add_product(self, product):
        if product.product_id in self.inventory:
            self.inventory[product.product_id].update_quantity(product.quantity)
        else:
            self.inventory[product.product_id] = product

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        if product_id in self.inventory:
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            print("Product not found in inventory.")

    def get_product(self, product_id):
        return self.inventory.get(product_id, None)

    def list_inventory(self):
        for product in self.inventory.values():
            print(product)

# Sample usage:
if __name__ == "__main__":
    product1 = Product(1, "Laptop", 1200, 10)
    product2 = Product(2, "Phone", 800, 20)

    warehouse = Warehouse()
    warehouse.add_product(product1)
    warehouse.add_product(product2)

    warehouse.list_inventory()
    warehouse.remove_product(1, 5)
    warehouse.list_inventory()
```
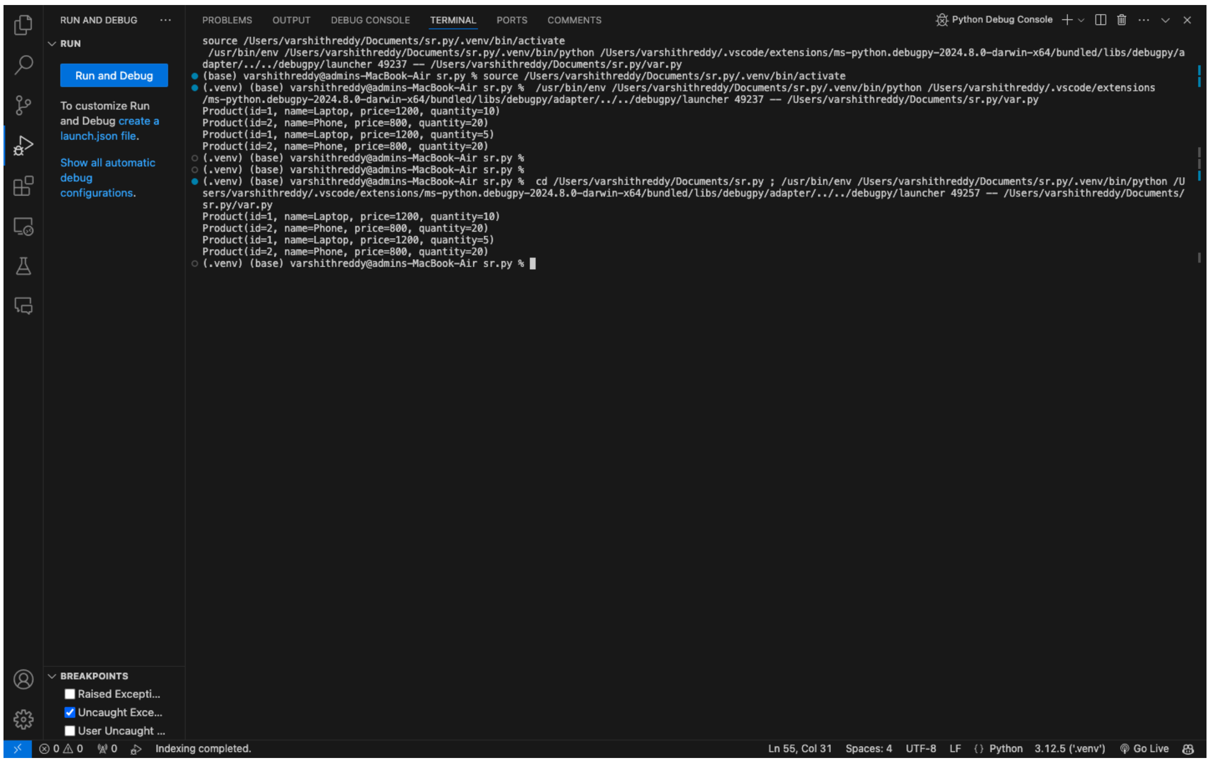

OBERVATION :

This code defines a simple warehouse management system using OOP concepts in Python. The Product class represents individual items with attributes like ID, name, price, and quantity, along with a method to update stock. The Warehouse class manages an inventory (stored as a dictionary), allowing products to be added, removed, retrieved, and listed. If a product already exists, its quantity is updated instead of duplicating it, and products are removed completely when their quantity reaches zero. The design is clean and functional for small-scale use, with readable outputs thanks to the __str__ method. However, it has limitations such as ignoring price updates when re-adding products, relying on print statements instead of proper error handling, exposing the inventory directly, and lacking search features beyond product IDs. Overall, it's a solid demo of inventory management with room for enhancements like exception handling, search by name, and support for price updates or persistence.

OUTPUT:



```
source /Users/varshithreddy/Documents/sr.py/.venv/bin/activate
 /usr/bin/env /Users/varshithreddy/Documents/sr.py/.venv/bin/python /Users/varshithreddy/.vscode/extensions/ms-python.debugpy-2024.8.0-darwin-x64/bundled/libs/debugpy/a
dapter/../../debugpy/launcher 49237 -- /Users/varshithreddy/Documents/sr.py/var.py
(base) varshithreddy@admins-MacBook-Air sr.py % source /Users/varshithreddy/Documents/sr.py/.venv/bin/activate
(.venv) (base) varshithreddy@admins-MacBook-Air sr.py %  /usr/bin/env /Users/varshithreddy/Documents/sr.py/.venv/bin/python /Users/varshithreddy/.vscode/extensions
/ms-python.debugpy-2024.8.0-darwin-x64/bundled/libs/debugpy/adapter/../../debugpy/launcher 49237 -- /Users/varshithreddy/Documents/sr.py/var.py
Product(id=1, name=Laptop, price=1200, quantity=10)
Product(id=2, name=Phone, price=800, quantity=20)
Product(id=1, name=Laptop, price=1200, quantity=5)
Product(id=2, name=Phone, price=800, quantity=20)
(.venv) (base) varshithreddy@admins-MacBook-Air sr.py %
(.venv) (base) varshithreddy@admins-MacBook-Air sr.py %
(.venv) (base) varshithreddy@admins-MacBook-Air sr.py %  cd /Users/varshithreddy/Documents/sr.py ; /usr/bin/env /Users/varshithreddy/Documents/sr.py/.venv/bin/python /U
sers/varshithreddy/.vscode/extensions/ms-python.debugpy-2024.8.0-darwin-x64/bundled/libs/debugpy/adapter/../../debugpy/launcher 49257 -- /Users/varshithreddy/Documents/
sr.py/var.py
Product(id=1, name=Laptop, price=1200, quantity=10)
Product(id=2, name=Phone, price=800, quantity=20)
Product(id=1, name=Laptop, price=1200, quantity=5)
Product(id=2, name=Phone, price=800, quantity=20)
(.venv) (base) varshithreddy@admins-MacBook-Air sr.py %
```