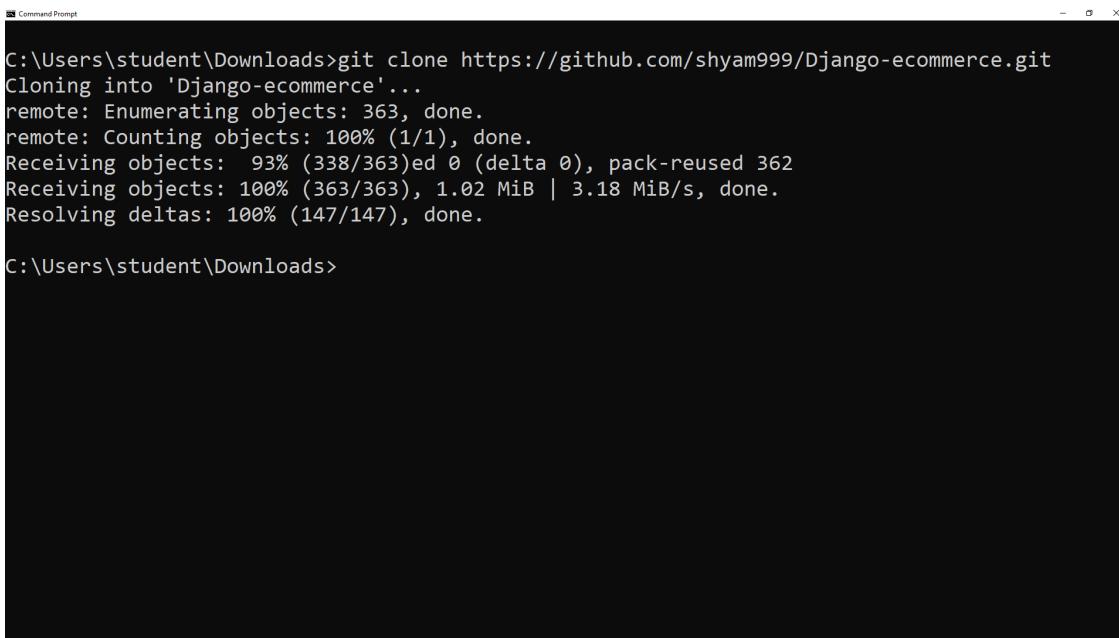

IT314 Software Engineering
Lab 05: Static Analysis
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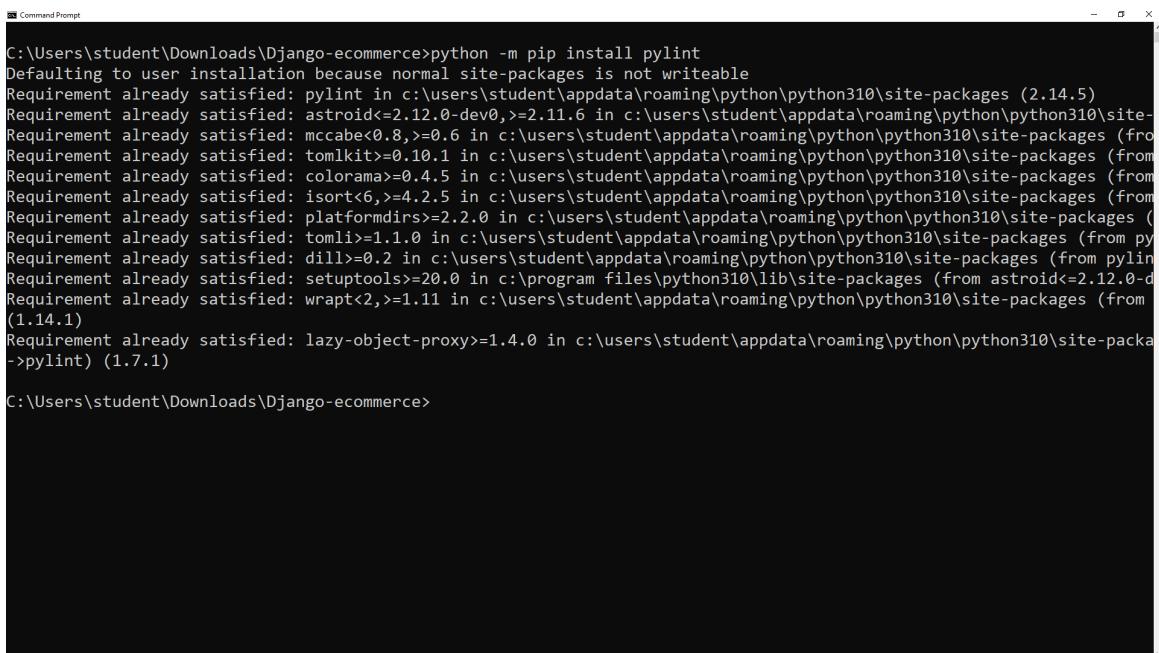
Cloning repo with link: <https://github.com/shyam999/Django-ecommerce>



```
C:\Users\student\Downloads>git clone https://github.com/shyam999/Django-ecommerce.git
Cloning into 'Django-ecommerce'...
remote: Enumerating objects: 363, done.
remote: Counting objects: 100% (1/1), done.
Receiving objects: 93% (338/363)ed 0 (delta 0), pack-reused 362
Receiving objects: 100% (363/363), 1.02 MiB | 3.18 MiB/s, done.
Resolving deltas: 100% (147/147), done.

C:\Users\student\Downloads>
```

Installing pylint:



```
C:\Users\student\Downloads\Django-ecommerce>python -m pip install pylint
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: pylint in c:\users\student\appdata\roaming\python\python310\site-packages (2.14.5)
Requirement already satisfied: astroid<=2.12.0-dev0,>=2.11.6 in c:\users\student\appdata\roaming\python\python310\site-
Requirement already satisfied: mccabe<0.8,>=0.6 in c:\users\student\appdata\roaming\python\python310\site-packages (fro
Requirement already satisfied: tomlkit>=0.10.1 in c:\users\student\appdata\roaming\python\python310\site-packages (from
Requirement already satisfied: colorama>=0.4.5 in c:\users\student\appdata\roaming\python\python310\site-packages (from
Requirement already satisfied: isort<6,>=4.2.5 in c:\users\student\appdata\roaming\python\python310\site-packages (from
Requirement already satisfied: platformdirs>=2.2.0 in c:\users\student\appdata\roaming\python\python310\site-packages (
Requirement already satisfied: toml>=1.1.0 in c:\users\student\appdata\roaming\python\python310\site-packages (from py
Requirement already satisfied: dill>=0.2 in c:\users\student\appdata\roaming\python\python310\site-packages (from pylin
Requirement already satisfied: setuptools>=20.0 in c:\program files\python310\lib\site-packages (from astroid<=2.12.0-d
Requirement already satisfied: wrapt<2,>=1.11 in c:\users\student\appdata\roaming\python\python310\site-packages (from
(1.14.1)
Requirement already satisfied: lazy-object-proxy>=1.4.0 in c:\users\student\appdata\roaming\python\python310\site-pac
->pylint) (1.7.1)

C:\Users\student\Downloads\Django-ecommerce>
```

Analyzing file: ./coupons/views.py

The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "Django-commerce". The "coupons" folder contains "migrations", "admin.py", "apps.py", "forms.py", "models.py", "urls.py", and "views.py".
- Code Editor:** The active file is "views.py" (version 3). The code implements a POST handler for applying a coupon, checking its validity and saving it to the database.
- Terminal:** The terminal shows the results of running pylint on the "coupons/views.py" file. It includes module-level docstrings and function-level docstrings for the "Coupon" class.
- Status Bar:** Shows the current branch ("master"), file count (2), line count (1), and file type ("Python").

Analysis:

- **C0304 : Missing Module Error:** A module docstring is a string that appears at the beginning of a Python module and provides information about the module's purpose, contents, and usage. Pylint expects every module to have a docstring and raises an error if it's missing.
 - **E1101 Class 'Coupon' has no 'objects' member:** The E1101 error in Pylint is a warning message that indicates an instance attribute has been accessed before it has been defined. This error typically occurs when an instance attribute is accessed within a class or method, but it has not been defined within the class or its parent classes.
 - **W0611 Unused render imported from django.shortcuts:** The W0611 error in Pylint is a warning message that indicates an unused variable. This error is triggered when a variable is defined but not used anywhere in the code.

Analyzing ./cart/cart.py file:

The screenshot shows a Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "Django-Ecommerce".
- Code Editor:** Displays the content of `cart.py`. The code includes methods for saving the session ID, getting a coupon, and calculating a discount.
- Terminal:** Shows the command `python -m pylint .\cart\cart.py` being run, followed by the Pylint output which lists several errors (C0114, E1101, C0116) related to missing docstrings and method members.
- Status Bar:** Shows the current branch is "master", and other status information like line and column counts.

```
PS C:\Users\student\Downloads\Django-e-commerce> python -m pylint .\cart\cart.py
*****
Module cart.cart
cart\cart.py:72:0: C0304: Final newline missing (missing-final-newline)
cart\cart.py:1:0: C0114: Missing module docstring (missing-module-docstring)
cart\cart.py:6:0: C0115: Missing class docstring (missing-class-docstring)
cart\cart.py:28:12: E1101: Instance of 'Cart' has no 'save' member (no-member)
cart\cart.py:37:19: E1101: Class 'Product' has no 'objects' member (no-member)
cart\cart.py:57:8: E1101: Instance of 'Cart' has no 'save' member (no-member)
cart\cart.py:60:4: C0116: Missing function or method docstring (missing-function-docstring)
cart\cart.py:62:19: E1101: Class 'Coupon' has no 'objects' member (no-member)
cart\cart.py:65:4: C0116: Missing function or method docstring (missing-function-docstring)
cart\cart.py:68:18: E1101: Instance of 'Cart' has no 'get_total_price' member (no-member)
cart\cart.py:71:4: C0116: Missing function or method docstring (missing-function-docstring)
cart\cart.py:72:15: E1101: Instance of 'Cart' has no 'get_total_price' member (no-member)

-----
Your code has been rated at 1.43/10 (previous run: 4.09/10, -2.66)

PS C:\Users\student\Downloads\Django-e-commerce>
```

Analysis:

- C0114 : Missing Module Error:** A module docstring is a string that appears at the beginning of a Python module and provides information about the module's purpose, contents, and usage. Pylint expects every module to have a docstring and raises an error if it's missing.
- E1101 : Instance of 'Cart' has no 'save' member:** the error message "Instance of 'Cart' has no 'save' member" indicates that you are trying to call a method named save on an instance of the Cart class, but that method does not exist on the Cart class.
- C0116 : Missing function docstring:** This error message indicates that Pylint has detected a missing docstring in your function or method. To resolve this error, you should add a docstring to your function or method.
- E1101 : Instance of 'Cart' has no 'get_total_price' member:** the error message "Instance of 'Cart' has no 'get_total_price' member" indicates that you are trying to call a method named 'get_total_price' on an instance of the Cart class, but that method does not exist on the Cart class.

Analyzing file ./shop/views.py

```
File Edit Selection View Go Run Terminal Help views.py - Django-ecommerce - Visual Studio Code
EXPLORER
DJANGO-ECOMMERCE
> migrations
views.py
admin.py
apps.py
forms.py
models.py
urls.py
> order
shop
> migrations
> static
> templates
> tests
views.py
> _init_.py
admin.py
apps.py
models.py
urls.py
PROBLEMS 9 OUTPUT DEBUG CONSOLE TERMINAL
powershell + ▾
PS C:\Users\student\Downloads\Django-ecommerce> python -m pylint .\shop\views.py
*****
shop\views.py:63:58: C0303: Trailing whitespace (trailing-whitespace)
shop\views.py:65:0: C0304: Final newline missing (missing-final-newline)
shop\views.py:1:0: C0114: Missing module docstring (missing-module-docstring)
shop\views.py:19:0: C0116: Missing function or method docstring (missing-function-docstring)
shop\views.py:21:17: E1101: Class 'Category' has no 'objects' member (no-member)
shop\views.py:22:15: E1101: Class 'Product' has no 'objects' member (no-member)
shop\views.py:48:0: C0116: Missing function or method docstring (missing-function-docstring)
shop\views.py:48:28: C0103: Argument name "id" doesn't conform to snake_case naming style (invalid-name)
shop\views.py:48:28: W0622: Redefining built-in 'id' (redefined-builtin)

-----
Your code has been rated at 0.00/10
PS C:\Users\student\Downloads\Django-ecommerce>
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF Python 3.10.5 64-bit
```

Analysis:

- C0303 : Trailing whitespace:** This error message indicates that Pylint has detected one or more lines of code that end with trailing whitespace. To resolve this error, you should remove the trailing whitespace from the affected lines of code.
- C0114 : Missing Module Error:** A module docstring is a string that appears at the beginning of a Python module and provides information about the module's purpose, contents, and usage. Pylint expects every module to have a docstring and raises an error if it's missing.
- C0103: Argument name 'id' doesn't conform to snake_case styling:** This error shows that proper variable naming conventions is not used. Here pylint suggests that we should use snake_case convention for naming variables.
- W0622 : Redefining built-in 'id':** Used when a variable or function override a built-in. This means that the 'id' variable is redefined again somewhere inside code.

Analyzing file : ./order/models.py

The screenshot shows the Visual Studio Code interface with the Django-commerce project open. The left sidebar displays the project structure, including files like asgi.py, urls.py, wsgi.py, migrations, admin.py, forms.py, and views.py under the DJANGO-ECOMMERCE root. A specific file, models.py, is selected in the order directory. The main editor area shows the Python code for the OrderItem model:

```
22     return sum(item.get_cost() for item in self.items.all())
23
24 class OrderItem(models.Model):
25     order = models.ForeignKey(Order, related_name='items', on_delete=models.CASCADE)
26     product = models.ForeignKey(Product, related_name='order_items', on_delete=models.CASCADE)
27
28     def __str__(self):
29         return '{}'.format(self.id)
30
31     def get_cost(self):
32         return self.price * self.quantity
33
```

Below the code, the terminal window shows the output of running Pylint on the file:

```
PS C:\Users\student\Downloads\Django-commerce> python -m pylint .\order\models.py
*****
order\models.py:1:0: C0114: Missing module docstring (missing-module-docstring)
order\models.py:4:0: C0115: Missing class docstring (missing-class-docstring)
order\models.py:15:4: C0115: Missing class docstring (missing-class-docstring)
order\models.py:15:4: R0903: Too few public methods (0/2) (too-few-public-methods)
order\models.py:19:15: C0209: Formatting a regular string which could be a f-string (consider-using-f-string)
order\models.py:21:33: E1101: Instance of 'Order' has no 'id' member (no-member)
order\models.py:21:4: C0116: Missing function or method docstring (missing-function-docstring)
order\models.py:22:47: E1101: Instance of 'Order' has no 'items' member (no-member)
order\models.py:24:0: C0115: Missing class docstring (missing-class-docstring)
order\models.py:29:15: C0209: Formatting a regular string which could be a f-string (consider-using-f-string)
order\models.py:29:27: E1101: Instance of 'OrderItem' has no 'id' member (no-member)
order\models.py:31:4: C0116: Missing function or method docstring (missing-function-docstring)
order\models.py:32:15: E1101: Instance of 'OrderItem' has no 'price' member (no-member)
order\models.py:32:28: E1101: Instance of 'OrderItem' has no 'quantity' member (no-member)

-----
Your code has been rated at 0.00/10 (previous run: 0.00/10, +0.00)
```

The status bar at the bottom indicates the current file is master*, with 5 changes, 0 deletions, and 8 additions.

Analysis:

- **C0303 : Trailing whitespace:** This error message indicates that Pylint has detected one or more lines of code that end with trailing whitespace. To resolve this error, you should remove the trailing whitespace from the affected lines of code.
- **R0903 : Too few public methods:** The error basically says that classes aren't meant to just store data, as you're basically treating the class as a dictionary.
- **E1101 : Instance of 'OrderItem' has no 'price' member:** The E1101 error is a type of error that occurs in Python when a module or class member is accessed that does not exist.

Analyzing file: ./shop/models.py

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows the project structure under "Django-eCommerce". The "models.py" file is selected in the "shop" directory.
- Editor:** Displays the code for "models.py".

```
31 class Meta:
32     ordering = ('name',)
33     index_together = (('id', 'slug'),)
34
35     def __str__(self):
36         return self.name
37
38     def get_absolute_url(self):
39         return reverse('shop:product_detail', args=[self.id, self.slug])
40
41
```
- Terminal:** Shows the output of running Pylint on the file.

```
PS C:\Users\student\Downloads\Django-eCommerce> python -m pylint .\shop\models.py
*****
shop\models.py:1:0: C0114: Missing module docstring (missing-module-docstring)
shop\models.py:4:0: C0115: Missing class docstring (missing-class-docstring)
shop\models.py:8:4: C0115: Missing class docstring (missing-class-docstring)
shop\models.py:8:4: R0903: Too few public methods (0/2) (too-few-public-methods)
shop\models.py:13:4: E0307: __str__ does not return str (invalid-str-return)
shop\models.py:16:4: C0116: Missing function or method docstring (missing-function-docstring)
shop\models.py:20:0: C0115: Missing class docstring (missing-class-docstring)
shop\models.py:32:4: C0115: Missing class docstring (missing-class-docstring)
shop\models.py:32:4: R0903: Too few public methods (0/2) (too-few-public-methods)
shop\models.py:36:4: E0307: __str__ does not return str (invalid-str-return)
shop\models.py:39:4: C0116: Missing function or method docstring (missing-function-docstring)
shop\models.py:40:52: E1101: Instance of 'Product' has no 'id' member (no-member)
```
- Status Bar:** Shows the current branch is "master", the file is "models.py", there are 3 errors, and the status bar indicates "Ln 14, Col 25 Spaces: 4 UTF-8 CRLF Python 3.10.5 64-bit".

Analysis:

- C0303 : Trailing whitespace:** This error message indicates that Pylint has detected one or more lines of code that end with trailing whitespace. To resolve this error, you should remove the trailing whitespace from the affected lines of code.
- E1101 : Instance of 'Product' has no 'id' member:** This error message indicates that you are trying to access an attribute called id on an instance of a class called Product, but the id attribute is not defined for that class.
- R0903 : Too few public methods:** This warning message indicates that a class has too few public methods, which could suggest a design issue or a potential problem with the class's functionality.
- E0307 : __str__ does not return str:** If the __str__ method of a class does not return a string, it can lead to errors when the method is called. For example, if you try to print an object that has a faulty __str__ method, you may get unexpected output or an error message.