



Dhirubhai Ambani  
Institute of Information and Communication Technology

## IT314 - Software Engineering

### Lab - 5 Static Analysis

**Name:** Ronit Jain

**Student ID:** 202001081

#### **Static Analysis:**

Static analysis is a method of examining the source code of a software program without executing it. Static analysis can help detect errors, bugs, vulnerabilities, and other quality issues in the code. Static analysis tools can perform various tasks such as checking syntax, style, logic, data flow, control flow, and security. Static analysis can improve the reliability, performance, and maintainability of software by identifying and correcting defects early in the development process.

#### **Static Analysis Tools:**

Static analysis tools are software tools that analyze the source code of a program without executing it. They can help developers find and fix errors, bugs, vulnerabilities, code smells, and other quality issues in their code. Static analysis tools can also measure various metrics of the code, such as complexity, readability, maintainability, test coverage, and documentation. Static analysis tools can be integrated into the development process as part of the code editor, the version control system, or the continuous integration pipeline. Some examples of static analysis tools are SonarQube, PMD, ESLint, and Pylint.

I will be using Pylint for Static analysis.

Git Repository - [stackoverflowClone-master](#)

# Errors in Manage.py

```
Administrator: Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\ronit\Desktop\DAIICT\SEM 6\IT - 314 Software Engineering\Lab\Lab5\stackoverflowClone-master> py -m pylint manage.py
***** Module manage
manage.py:11:8: C0415: Import outside toplevel (django.core.management.execute_from_command_line) (import-outside-toplevel)

-----
Your code has been rated at 9.09/10

PS C:\Users\ronit\Desktop\DAIICT\SEM 6\IT - 314 Software Engineering\Lab\Lab5\stackoverflowClone-master> |
```

## Error in Line 11:8.

```
File Edit Selection View Go Run Terminal Help
manage.py - Visual Studio Code [Administrator]

manage.py 1 X
C: > Users > ronit > Desktop > DAIICIT > SEM 6 > IT - 314 Software Engineering > Lab > Lab5 > stackoverflowClone-master > manage.py > ...

1  #!/usr/bin/env python
2  """Django's command-line utility for administrative tasks."""
3  import os
4  import sys
5
6
7  def main():
8      """Run administrative tasks."""
9      os.environ.setdefault('DJANGO_SETTINGS_MODULE', 'stackoverflowClone.settings')
10     try:
11         from django.core.management import execute_from_command_line
12     except ImportError as exc:
13         raise ImportError(
14             "Couldn't import Django. Are you sure it's installed and "
15             "available on your PYTHONPATH environment variable? Did you "
16             "forget to activate a virtual environment?"
17         ) from exc
18     execute_from_command_line(sys.argv)
19
20
21 if __name__ == '__main__':
22     main()
23
```

## Error: "Import outside Top-level"

Technically, the 11th line should be in the sixth place as it should appear before `def main()` because `def main` is this system's highest rank().

This Error is Valid.

# Errors in views.py

```
Administrator: Windows Powe
PS C:\Users\ronit\Desktop\DAIICT\SEM 6\IT - 314 Software Engineering\Lab\Lab5\stackoverflowClone-master\users> py -m pylint views.py
***** Module views
views.py:26:0: C0303: Trailing whitespace (trailing-whitespace)
views.py:38:0: C0303: Trailing whitespace (trailing-whitespace)
views.py:39:0: C0303: Trailing whitespace (trailing-whitespace)
views.py:40:0: C0305: Trailing newlines (trailing-newlines)
views.py:1:0: C0114: Missing module docstring (missing-module-docstring)
views.py:1:0: E0401: Unable to import 'django.shortcuts' (import-error)
views.py:2:0: E0401: Unable to import 'django.urls' (import-error)
views.py:3:0: E0401: Unable to import 'django.views.generic' (import-error)
views.py:4:0: E0401: Unable to import 'django.contrib.auth.views' (import-error)
views.py:11:0: C0115: Missing class docstring (missing-class-docstring)
views.py:11:0: R0903: Too few public methods (0/2) (too-few-public-methods)
views.py:15:0: C0115: Missing class docstring (missing-class-docstring)
views.py:15:0: R0903: Too few public methods (0/2) (too-few-public-methods)
views.py:21:0: C0115: Missing class docstring (missing-class-docstring)
views.py:21:0: R0903: Too few public methods (0/2) (too-few-public-methods)
views.py:27:0: C0115: Missing class docstring (missing-class-docstring)
views.py:33:4: C0116: Missing function or method docstring (missing-function-docstring)
views.py:34:8: W0201: Attribute 'object' defined outside __init__ (attribute-defined-outside-init)
views.py:27:0: R0903: Too few public methods (1/2) (too-few-public-methods)
views.py:1:0: W0611: Unused render imported from django.shortcuts (unused-import)
views.py:5:0: W0611: Unused Question imported from forum.models (unused-import)

-----
Your code has been rated at -3.70/10

PS C:\Users\ronit\Desktop\DAIICT\SEM 6\IT - 314 Software Engineering\Lab\Lab5\stackoverflowClone-master\users> |
```

## Code:

```
views.py - Visual Studio Code [Administrator]
File Edit Selection View Go Run Terminal Help
forms.py 5 signals.py 3 models.py 3 tests.py 1 views.py 7 X admin.py 3 _init_.py urls.py 2 apps.py 2
C:\Users\ronit\Desktop\DAIICT\SEM 6\IT - 314 Software Engineering\Lab\Lab5\stackoverflowClone-master\users > views.py > ...
1 from django.shortcuts import render
2 from django.urls import reverse_lazy
3 from django.views.generic import CreateView
4 from django.contrib.auth.views import LogoutView as DjangoLogoutView, LoginView as DjangoLoginView
5 from forum.models import Question
6 from users.models import User, Profile
7 from users.forms import UserCreationForm
8
9
10 # Create your views here.
11 class LogoutView(DjangoLogoutView):
12     next_page = reverse_lazy('forum:home')
13
14
15 class LoginView(DjangoLoginView):
16     next_page = reverse_lazy('forum:home')
17     template_name = 'auth/login.html'
18     redirect_authenticated_user = True
19
20
21 class RegisterView(CreateView):
22     model = User
23     form_class = UserCreationForm
```

PROBLEMS 27 OUTPUT DEBUG CONSOLE TERMINAL JUPYTER

views.py C:\Users\ronit\Desktop\DAIICT\SEM 6\IT - 314 Software Engineering\Lab\Lab5\stackoverflowClone-master\users

- Import "django.shortcuts" could not be resolved from source Pylance(reportMissingModuleSource) [Ln 1, Col 6]
- Import "django.urls" could not be resolved from source Pylance(reportMissingModuleSource) [Ln 2, Col 6]
- Import "django.views.generic" could not be resolved from source Pylance(reportMissingModuleSource) [Ln 3, Col 6]

Ln 10, Col 26 Spaces: 4 UTF-8 CRLF Python 3.9.0 64-bit Indents: 0 Go Live

**Error Type 1: views.py:1:0: C0114: Missing module docstring (missing-module-docstring)**

The docstring is a broad description of a module that is written before it (typically enclosed in inverted commas). Not everywhere requires it.

Error is optional.

**Error Type 2: views.py:6:0: C0103: Function name "read\_All\_Notifications" doesn't conform to snake\_case naming style (invalid-name)**

Here is the request code for function read\_All\_Priv\_Notifications: With regard to the snake\_case naming convention, each character following the underscore should be a small letter. However, they are capitalized.

Error is valid.

**Error Type 3 : views.py:3:0: W0611: Unused HttpResponseRedirect imported from django.http (unused-import)**

Here the line 3 code: *from django.http import JsonResponse, HttpResponseRedirect, HttpResponse*, might not be correct here as in the line 25 and 15 we are returning a json response and json response Http must be imported here for this.

So it's optional to keep the line 3.

**Error type 4: views.py:8:15: E1101: Class 'Notification' has no 'objects' member (no-member)**

As in the code screenshot we can't see any member declaration in the 'notification' class. So the error is valid.

**Error type 5: views.py:26:0: C0305: Trailing newlines (trailing-newlines)**

This error has occurred because there is one more line after line 26 ,i.e line 27. It's an empty line, it's not required here.

So this error is more of a kind of warning and amending it is optional