Lab 5

Date : 15-03-2023

Subject : Software Engineering

Subject Code : IT314

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The Static tool I selected to use -pylint

1. Link of Reposistary -
   https://github.com/Python-World/python-mini-projects/blob/master/projects/Extract_zip_fil
   es/extract_zip_files.py

```python
import argparse
import errno
import fileinput
import getpass
import hashlib
import sys

from trac.util.text import printerr


def ask_pass():
    pass1 = getpass.getpass('New password: ')
    pass2 = getpass.getpass('Re-type new password: ')
    if pass1 != pass2:
        printerr("htdigest: password verification error")
        sys.exit(1)
    return pass1


def get_digest(userprefix, password=None):
    if password is None:
        password = ask_pass()
    return make_digest(userprefix, password)


def make_digest(userprefix, password):
    value = (userprefix + password).encode('utf-8')
    return userprefix + hashlib.md5(value).hexdigest()


def main():
    """
    %(prog)s [-c] passwordfile realm username
    %(prog)s -b[c] passwordfile realm username password\
    """
```

Error :

```
PS C:\Users\Public\Python> python -m pylint .\AlamClocl.py
************* Module AlamClocl
AlamClocl.py:109:0: C0304: Final newline missing (missing-final-newline)
AlamClocl.py:1:0: C0114: Missing module docstring (missing-module-docstring)
AlamClocl.py:1:0: C0103: Module name "AlamClocl" doesn't conform to snake_case naming style (invalid-name)
AlamClocl.py:25:0: E0401: Unable to import 'trac.util.text' (import-error)
AlamClocl.py:28:0: C0116: Missing function or method docstring (missing-function-docstring)
AlamClocl.py:37:0: C0116: Missing function or method docstring (missing-function-docstring)
AlamClocl.py:43:0: C0116: Missing function or method docstring (missing-function-docstring)
AlamClocl.py:71:13: C0209: Formatting a regular string which could be a f-string (consider-using-f-string)
AlamClocl.py:74:67: C0103: Variable name "f" doesn't conform to snake_case naming style (invalid-name)
AlamClocl.py:76:8: C0103: Variable name "e" doesn't conform to snake_case naming style (invalid-name)
AlamClocl.py:78:25: C0209: Formatting a regular string which could be a f-string (consider-using-f-string)
AlamClocl.py:93:71: C0103: Variable name "f" doesn't conform to snake_case naming style (invalid-name)
AlamClocl.py:95:8: C0103: Variable name "e" doesn't conform to snake_case naming style (invalid-name)
AlamClocl.py:97:25: C0209: Formatting a regular string which could be a f-string (consider-using-f-string)
AlamClocl.py:102:25: C0209: Formatting a regular string which could be a f-string (consider-using-f-string)
AlamClocl.py:48:0: R0912: Too many branches (16/12) (too-many-branches)


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Your code has been rated at 6.92/10
```

2.Link of Repositary -
https://github.com/Python-World/python-mini-projects/blob/master/projects/Create_a_simple_sto
pwatch/stopwatch.py

Code :

```python
import tkinter as Tkinter
from datetime import datetime
counter = 0
running = False


def counter_label(label):
    def count():
        if running:
            global counter
            # To manage the intial delay.
            if counter == 0:
                display = 'Ready!'
            else:
                tt = datetime.utcfromtimestamp(counter)
                string = tt.strftime('%H:%M:%S')
                display = string

            label['text'] = display

            # label.after(arg1, arg2) delays by
            # first argument given in milliseconds
            # and then calls the function given as second argument.
            # Generally like here we need to call the
            # function in which it is present repeatedly.
            # Delays by 1000ms=1 seconds and call count again.
            label.after(1000, count)
            counter += 1

    # Triggering the start of the counter.
    count()


# start function of the stopwatch
def Start(label):
    global running
    running = True
    counter_label(label)
    start['state'] = 'disabled'
    stop['state'] = 'normal'
```

Error :

```
PS C:\Users\Public\Python> python -m pylint .\stopwatch.py
************* Module stopwatch
stopwatch.py:11:32: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:18:0: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:20:0: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:21:38: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:22:41: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:23:58: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:24:44: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:25:48: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:26:53: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:29:0: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:30:39: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:32:0: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:34:33: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:42:0: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:44:32: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:51:0: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:53:33: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:55:0: W0311: Bad indentation. Found 1 spaces, expected 4 (bad-indentation)
stopwatch.py:56:0: W0311: Bad indentation. Found 1 spaces, expected 4 (bad-indentation)
stopwatch.py:57:43: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:58:0: W0311: Bad indentation. Found 1 spaces, expected 4 (bad-indentation)
stopwatch.py:59:0: W0311: Bad indentation. Found 2 spaces, expected 8 (bad-indentation)
stopwatch.py:60:0: W0311: Bad indentation. Found 2 spaces, expected 8 (bad-indentation)
stopwatch.py:61:54: C0303: Trailing whitespace (trailing-whitespace)
stopwatch.py:62:0: W0311: Bad indentation. Found 1 spaces, expected 4 (bad-indentation)
stopwatch.py:63:0: W0311: Bad indentation. Found 2 spaces, expected 8 (bad-indentation)
stopwatch.py:81:0: C0304: Final newline missing (missing-final-newline)
stopwatch.py:1:0: C0114: Missing module docstring (missing-module-docstring)
stopwatch.py:3:0: C0103: Constant name "counter" doesn't conform to UPPER_CASE naming style (invalid-name)
stopwatch.py:4:0: C0103: Constant name "running" doesn't conform to UPPER_CASE naming style (invalid-name)
stopwatch.py:7:0: C0116: Missing function or method docstring (missing-function-docstring)
stopwatch.py:7:18: W0621: Redefining name 'label' from outer scope (line 71) (redefined-outer-name)
stopwatch.py:10:12: C0103: Constant name "counter" doesn't conform to UPPER_CASE naming style (invalid-name)
stopwatch.py:10:12: W0603: Using the global statement (global-statement)
stopwatch.py:15:16: C0103: Variable name "tt" doesn't conform to snake_case naming style (invalid-name)
stopwatch.py:35:0: C0116: Missing function or method docstring (missing-function-docstring)
stopwatch.py:35:0: C0103: Function name "Start" doesn't conform to snake_case naming style (invalid-name)
stopwatch.py:35:10: W0621: Redefining name 'label' from outer scope (line 71) (redefined-outer-name)
stopwatch.py:36:4: C0103: Constant name "running" doesn't conform to UPPER_CASE naming style (invalid-name)
stopwatch.py:36:4: W0603: Using the global statement (global-statement)
stopwatch.py:45:0: C0116: Missing function or method docstring (missing-function-docstring)
stopwatch.py:45:0: C0103: Function name "Stop" doesn't conform to snake_case naming style (invalid-name)
```

```
stopwatch.py:46:4: C0103: Constant name "running" doesn't conform to UPPER_CASE naming style (invalid-name)
stopwatch.py:46:4: W0603: Using the global statement (global-statement)
stopwatch.py:54:0: C0116: Missing function or method docstring (missing-function-docstring)
stopwatch.py:54:0: C0103: Function name "Reset" doesn't conform to snake_case naming style (invalid-name)
stopwatch.py:54:10: W0621: Redefining name 'label' from outer scope (line 71) (redefined-outer-name)
stopwatch.py:55:1: C0103: Constant name "counter" doesn't conform to UPPER_CASE naming style (invalid-name)
stopwatch.py:55:1: W0603: Using the global statement (global-statement)

-----------------------------------------------------------------
Your code has been rated at 0.39/10 (previous run: 0.39/10, +0.00)
```

3. Link :
https://github.com/Python-World/python-mini-projects/blob/master/projects/Alarm%20clock/alarm_clock.py

Code :

```python
# Import Required Library
from tkinter import *
import datetime
import time
import winsound
from threading import *

# Create Object
root = Tk()

# Set geometry
root.geometry("400x200")

# Use Threading
def Threading():
    t1=Thread(target=alarm)
    t1.start()

def alarm():
    # Infinite Loop
    while True:
        # Set Alarm
        set_alarm_time = f"{hour.get()}:{minute.get()}:{second.get()}"

        # Wait for one seconds
        time.sleep(1)

        # Get current time
        current_time = datetime.datetime.now().strftime("%H:%M:%S")
        print(current_time,set_alarm_time)

        # Check whether set alarm is equal to current time or not
        if current_time == set_alarm_time:
            print("Time to Wake up")
            # Playing sound
            winsound.PlaySound("sound.wav",winsound.SND_ASYNC)

# Add Labels, Frame, Button, Optionmenus
Label(root,text="Alarm Clock",font=("Helvetica 20 bold"),fg="red").pack(pady=10)
Label(root,text="Set Time",font=("Helvetica 15 bold")).pack()
```

Error :

```
PS C:\Users\Public\Python> python -m pylint .\AlamClocl.py
************* Module AlamClocl
AlamClocl.py:16:0: W0311: Bad indentation. Found 1 spaces, expected 4 (bad-indentation)
AlamClocl.py:17:0: W0311: Bad indentation. Found 1 spaces, expected 4 (bad-indentation)
AlamClocl.py:21:0: W0311: Bad indentation. Found 1 spaces, expected 4 (bad-indentation)
AlamClocl.py:23:0: W0311: Bad indentation. Found 2 spaces, expected 8 (bad-indentation)
AlamClocl.py:26:0: W0311: Bad indentation. Found 2 spaces, expected 8 (bad-indentation)
AlamClocl.py:29:0: W0311: Bad indentation. Found 2 spaces, expected 8 (bad-indentation)
AlamClocl.py:30:0: W0311: Bad indentation. Found 2 spaces, expected 8 (bad-indentation)
AlamClocl.py:33:0: W0311: Bad indentation. Found 2 spaces, expected 8 (bad-indentation)
AlamClocl.py:34:0: W0311: Bad indentation. Found 3 spaces, expected 12 (bad-indentation)
AlamClocl.py:36:0: W0311: Bad indentation. Found 3 spaces, expected 12 (bad-indentation)
AlamClocl.py:86:0: C0304: Final newline missing (missing-final-newline)
AlamClocl.py:1:0: C0114: Missing module docstring (missing-module-docstring)
AlamClocl.py:1:0: C0103: Module name "AlamClocl" doesn't conform to snake_case naming style (invalid-name)
AlamClocl.py:6:0: W0622: Redefining built-in 'enumerate' (redefined-builtin)
AlamClocl.py:2:0: W0401: Wildcard import tkinter (wildcard-import)
AlamClocl.py:6:0: W0401: Wildcard import threading (wildcard-import)
AlamClocl.py:15:0: C0116: Missing function or method docstring (missing-function-docstring)
AlamClocl.py:15:0: C0103: Function name "Threading" doesn't conform to snake_case naming style (invalid-name)
AlamClocl.py:16:1: C0103: Variable name "t1" doesn't conform to snake_case naming style (invalid-name)
AlamClocl.py:19:0: C0116: Missing function or method docstring (missing-function-docstring)
AlamClocl.py:2:0: W0614: Unused import(s) enum, sys, types, TclError, re, wantobjects, TkVersion, TclVersion, READABLE, WRITABLE, EXCEPTION, EventType, Event, NoDefaultRoot, Variable, I
ntVar, DoubleVar, BooleanVar, mainloop, getint, getdouble, getboolean, Misc, CallWrapper, XView, YView, Wm, Tcl, Pack, Place, Grid, BaseWidget, Widget, Toplevel, Canvas, Checkbutton, En
try, Listbox, Menu, Menubutton, Message, Radiobutton, Scale, Scrollbar, Text, Image, PhotoImage, BitmapImage, image_names, image_types, Spinbox, LabelFrame, PanedWindow, NO, FALSE, OFF,
 YES, TRUE, ON, N, S, W, E, NW, SW, NE, SE, NS, EW, NSEW, CENTER, NONE, X, Y, BOTH, TOP, RIGHT, BOTTOM, RAISED, SUNKEN, FLAT, RIDGE, GROOVE, SOLID, HORIZONTAL, VERTICAL, NUMERIC, CHAR,
WORD, BASELINE, INSIDE, OUTSIDE, SEL, SEL_FIRST, SEL_LAST, END, INSERT, CURRENT, ANCHOR, ALL, NORMAL, DISABLED, ACTIVE, HIDDEN, CASCADE, CHECKBUTTON, COMMAND, RADIOBUTTON, SEPARATOR, SI
NGLE, BROWSE, MULTIPLE, EXTENDED, DOTBOX, UNDERLINE, PIESLICE, CHORD, ARC, FIRST, LAST, BUTT, PROJECTING, ROUND, BEVEL, MITER, MOVETO, SCROLL, UNITS and PAGES from wildcard import of tk
inter (unused-wildcard-import)
AlamClocl.py:6:0: W0614: Unused import(s) functools, get_ident, get_native_id, ThreadError, TIMEOUT_MAX, setprofile, getprofile, settrace, gettrace, Lock, RLock, Condition, Semaphore, B
oundedSemaphore, Barrier, BrokenBarrierError, ExceptHookArgs, excepthook, Timer, current_thread, currentThread, active_count, activeCount, enumerate, main_thread, WeakSet, namedtuple, s
tack_size, local and lock from wildcard import of threading (unused-wildcard-import)

------------------------------------------------------------------
Your code has been rated at 4.50/10 (previous run: 6.92/10, -2.42)
```

4. Link :

https://github.com/Python-World/python-mini-projects/blob/master/projects/Captcha_Genrator/Captcha_Genrator.py

Code :

```python
image = ImageCaptcha(fonts=['C:/Users/Administrator/Downloads/ChelseaMarketsr.ttf', 'C:/Users/Administrator/Downloads/DejaVuSanssr.ttf'])

random=str(randint(100000,999999))
data = image.generate(random)
assert isinstance(data, BytesIO)
image.write(random,'out.png')

def verify():
    global random
    x=t1.get("0.0",END)
    if (int(x)==int(random)):
        messagebox.showinfo("sucsess", "verified")
    else:
        messagebox.showinfo("Alert", "Not verified")
        refresh()

def refresh():
        random=str(randint(100000,999999))
        data = image.generate(random)
        assert isinstance(data, BytesIO)
        image.write(random,'out.png')
        photo = PhotoImage(file="out.png")
        l1.config(image=photo,height=100,width=200)
        l1.update()
        UpdateLabel()

root=Tk()
photo = PhotoImage(file="out.png")

l1=Label(root,image=photo,height=100,width=200)
t1=Text(root,height=5,width=50)
b1=Button(root,text="submit",command=verify)
b2=Button(root,text="refresh",command=refresh)

l1.pack()
t1.pack()
b1.pack()
b2.pack()
root.mainloop()
```

Error :

```
PS C:\Users\Public\Python> python -m pylint .\captchgenrator.py
************* Module captchgenrator
captchgenrator.py:15:0: C0301: Line too long (137/100) (line-too-long)
captchgenrator.py:25:0: C0325: Unnecessary parens after 'if' keyword (superfluous-parens)
captchgenrator.py:32:0: W0311: Bad indentation. Found 8 spaces, expected 4 (bad-indentation)
captchgenrator.py:33:0: W0311: Bad indentation. Found 8 spaces, expected 4 (bad-indentation)
captchgenrator.py:34:0: W0311: Bad indentation. Found 8 spaces, expected 4 (bad-indentation)
captchgenrator.py:35:0: W0311: Bad indentation. Found 8 spaces, expected 4 (bad-indentation)
captchgenrator.py:36:0: W0311: Bad indentation. Found 8 spaces, expected 4 (bad-indentation)
captchgenrator.py:37:0: W0311: Bad indentation. Found 8 spaces, expected 4 (bad-indentation)
captchgenrator.py:38:0: W0311: Bad indentation. Found 8 spaces, expected 4 (bad-indentation)
captchgenrator.py:39:0: W0311: Bad indentation. Found 8 spaces, expected 4 (bad-indentation)
captchgenrator.py:40:0: C0303: Trailing whitespace (trailing-whitespace)
captchgenrator.py:53:0: C0304: Final newline missing (missing-final-newline)
captchgenrator.py:9:0: W0401: Wildcard import tkinter (wildcard-import)
captchgenrator.py:10:0: W0401: Wildcard import random (wildcard-import)
captchgenrator.py:13:0: E0401: Unable to import 'captcha.image' (import-error)
captchgenrator.py:17:0: C0103: Constant name "random" doesn't conform to UPPER_CASE naming style (invalid-name)
captchgenrator.py:22:0: C0116: Missing function or method docstring (missing-function-docstring)
captchgenrator.py:23:4: C0103: Constant name "random" doesn't conform to UPPER_CASE naming style (invalid-name)
captchgenrator.py:23:4: W0602: Using global for 'random' but no assignment is done (global-variable-not-assigned)
captchgenrator.py:24:4: C0103: Variable name "x" doesn't conform to snake_case naming style (invalid-name)
captchgenrator.py:31:0: C0116: Missing function or method docstring (missing-function-docstring)
captchgenrator.py:32:8: W0621: Redefining name 'random' from outer scope (line 10) (redefined-outer-name)
captchgenrator.py:33:8: W0621: Redefining name 'data' from outer scope (line 18) (redefined-outer-name)
captchgenrator.py:36:8: W0621: Redefining name 'photo' from outer scope (line 42) (redefined-outer-name)
captchgenrator.py:39:8: E0602: Undefined variable 'UpdateLabel' (undefined-variable)
captchgenrator.py:11:0: C0412: Imports from package tkinter are not grouped (ungrouped-imports)
captchgenrator.py:12:0: W0611: Unused import string (unused-import)
captchgenrator.py:9:0: W0614: Unused import(s) enum, sys, types, TclError, re, wantobjects, TkVersion, TclVersion, READABLE, WRITABLE, EXCEPTION, EventType, Event, NoDefaultRoot, Variab
le, StringVar, IntVar, DoubleVar, BooleanVar, mainloop, getint, getdouble, getboolean, Misc, CallWrapper, XView, YView, Wm, Tcl, Pack, Place, Grid, BaseWidget, Widget, Toplevel, Canvas,
 Checkbutton, Entry, Frame, Listbox, Menu, Menubutton, Message, Radiobutton, Scale, Scrollbar, OptionMenu, Image, BitmapImage, image_names, image_types, Spinbox, LabelFrame, PanedWindow
, NO, FALSE, OFF, YES, TRUE, ON, N, S, W, E, NW, SW, NE, SE, NS, EW, NSEW, CENTER, NONE, X, Y, BOTH, LEFT, TOP, RIGHT, BOTTOM, RAISED, SUNKEN, FLAT, RIDGE, GROOVE, SOLID, HORIZONTAL, VE
RTICAL, NUMERIC, CHAR, WORD, BASELINE, INSIDE, OUTSIDE, SEL, SEL_FIRST, SEL_LAST, INSERT, CURRENT, ANCHOR, ALL, NORMAL, DISABLED, ACTIVE, HIDDEN, CASCADE, CHECKBUTTON, COMMAND, RADIOBUT
TON, SEPARATOR, SINGLE, BROWSE, MULTIPLE, EXTENDED, DOTBOX, UNDERLINE, PIESLICE, CHORD, ARC, FIRST, LAST, BUTT, PROJECTING, ROUND, BEVEL, MITER, MOVETO, SCROLL, UNITS and PAGES from wil
dcard import of tkinter (unused-wildcard-import)
captchgenrator.py:10:0: W0614: Unused import(s) NV_MAGICCONST, LOG4, SG_MAGICCONST, BPF, RECIP_BPF, Random, SystemRandom, seed, uniform, triangular, choice, randrange, sample, shuffle,
choices, normalvariate, lognormvariate, expovariate, vonmisesvariate, gammavariate, gauss, betavariate, paretovariate, weibullvariate, getstate, setstate, getrandbits, randbytes and TWO
PI from wildcard import of random (unused-wildcard-import)

----------------------------------
Your code has been rated at 0.26/10
```

5. Link :

https://github.com/Python-World/python-mini-projects/blob/master/projects/Cli_todo/todo.py

Code :

```python
import click

@click.group()
@click.pass_context
def todo(ctx):
    '''Simple CLI Todo App'''
    ctx.ensure_object(dict)
    #Open todo.txt - first line contains latest ID, rest contain tasks and IDs
    with open('./todo.txt') as f:
        content = f.readlines()
    #Transfer data from todo.txt to the context
    ctx.obj['LATEST'] = int(content[:1][0])
    ctx.obj['TASKS'] = {en.split('```')[0]:en.split('```')[1][:-1] for en in content[1:]}


@todo.command()
@click.pass_context
def tasks(ctx):
    '''Display tasks'''
    if ctx.obj['TASKS']:
        click.echo('YOUR TASKS\n*********')
        #Iterate through all the tasks stored in the context
        for i, task in ctx.obj['TASKS'].items():
            click.echo('• ' + task + ' (ID: ' + i + ')')
        click.echo('')
    else:
        click.echo('No tasks yet! Use ADD to add one.\n')


@todo.command()
@click.pass_context
@click.option('-add', '--add_task', prompt='Enter task to add')
def add(ctx, add_task):
    '''Add a task'''
    if add_task:
        #Add task to list in context
        ctx.obj['TASKS'][ctx.obj['LATEST']] = add_task
        click.echo('Added task "' + add_task + '" with ID ' + str(ctx.obj['LATEST']))
        #Open todo.txt and write current index and tasks with IDs (separated by " ``` ")
        curr_ind = [str(ctx.obj['LATEST'] + 1)]
        tasks = [str(i) + '```' + t for (i, t) in ctx.obj['TASKS'].items()]
        with open('./todo.txt', 'w') as f:
```

Error :

```
PS C:\Users\Public\Python> python -m pylint .\todo.py
************* Module todo
todo.py:34:36: C0303: Trailing whitespace (trailing-whitespace)
todo.py:38:47: C0303: Trailing whitespace (trailing-whitespace)
todo.py:56:51: C0303: Trailing whitespace (trailing-whitespace)
todo.py:68:0: C0304: Final newline missing (missing-final-newline)
todo.py:1:0: C0114: Missing module docstring (missing-module-docstring)
todo.py:9:9: W1514: Using open without explicitly specifying an encoding (unspecified-encoding)
todo.py:9:31: C0103: Variable name "f" doesn't conform to snake_case naming style (invalid-name)
todo.py:39:8: W0621: Redefining name 'tasks' from outer scope (line 17) (redefined-outer-name)
todo.py:40:13: W1514: Using open without explicitly specifying an encoding (unspecified-encoding)
todo.py:40:40: C0103: Variable name "f" doesn't conform to snake_case naming style (invalid-name)
todo.py:41:26: C0209: Formatting a regular string which could be a f-string (consider-using-f-string)
todo.py:57:12: W0621: Redefining name 'tasks' from outer scope (line 17) (redefined-outer-name)
todo.py:58:17: W1514: Using open without explicitly specifying an encoding (unspecified-encoding)
todo.py:58:44: C0103: Variable name "f" doesn't conform to snake_case naming style (invalid-name)
todo.py:59:30: C0209: Formatting a regular string which could be a f-string (consider-using-f-string)
todo.py:62:17: W1514: Using open without explicitly specifying an encoding (unspecified-encoding)
todo.py:62:44: C0103: Variable name "f" doesn't conform to snake_case naming style (invalid-name)
todo.py:68:4: E1120: No value for argument 'ctx' in function call (no-value-for-parameter)

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Your code has been rated at 4.05/10
```

Understanding of the errors

Software tools can assist programmers with identifying and resolving bugs, flaws, security holes, offensive code, and other coding problems. Tools for static analysis can also measure several parameters of the complexity, readability, maintainability, and documentation. The continuous integration pipeline, version control system, or code editor can all include static analysis tools as a component of the development process. Some of the errors were not relevant and meant nothing but some were insightful helping in better runnability of code.