

IT314 - Software Engineering

Lab 5 - Static Analysis

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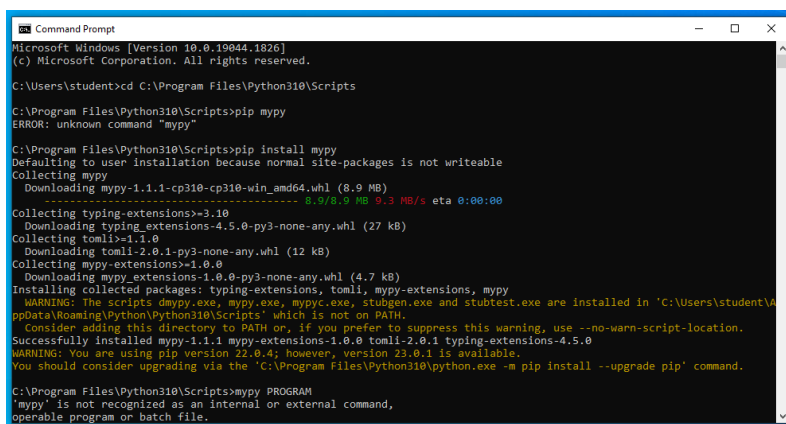
ID: 202001091

The Static Analysis tool used here is mypy for python code.

To download this tool we need to write the following commands in the command prompt:

pip install mypy

For this command to work we have to set the path to script folder in the python-program files-admin-C



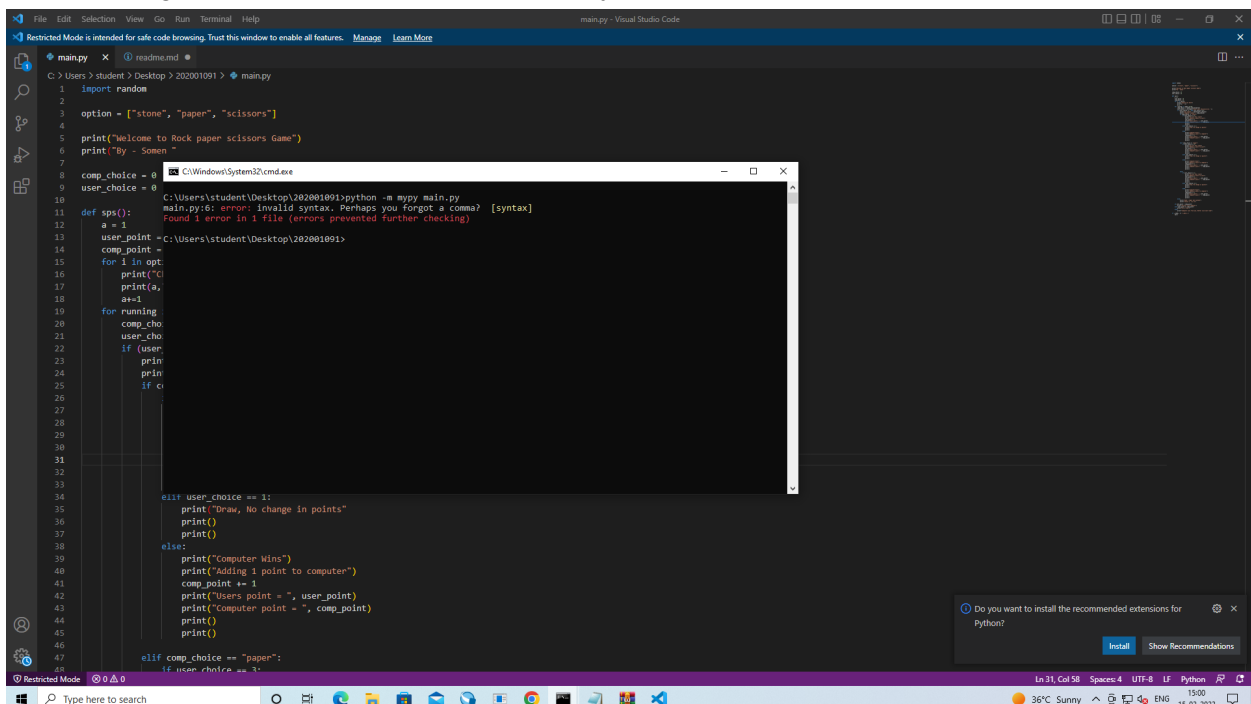
```
Microsoft Windows [Version 10.0.19044.1826]
(c) Microsoft Corporation. All rights reserved.

C:\Users\student>cd C:\Program Files\Python310\Scripts
C:\Program Files\Python310\Scripts>pip mypy
ERROR: unknown command "mypy"

C:\Program Files\Python310\Scripts>pip install mypy
Defaulting to user installation because normal site-packages is not writeable
Collecting mypy
  Downloading mypy-1.1.1-cp310-cp310-win_amd64.whl (8.9 MB)
    ----- 8.9/8.9 MB 9.3 MB/s eta 0:00:00
Collecting typing_extensions>=3.10
  Downloading typing_extensions-4.5.0-py3-none-any.whl (27 kB)
Collecting tomli>=1.1.0
  Downloading tomli-2.0.1-py3-none-any.whl (12 kB)
Collecting mypy_extensions>=1.0.0
  Downloading mypy_extensions-1.0.0-py3-none-any.whl (4.7 kB)
Installing collected packages: typing_extensions, tomli, mypy_extensions, mypy
WARNING: The scripts dmpyc.exe, mypy.exe, mypyc.exe, stubgen.exe and stubtest.exe are installed in 'C:\Users\student\AppData\Roaming\Python\Python310\Scripts' which is not on PATH.
Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.
Successfully installed mypy-1.1.1 mypy_extensions-1.0.0 tomli-2.0.1 typing_extensions-4.5.0
WARNING: You are using pip version 22.0.4; however, version 23.0.1 is available.
You should consider upgrading via the 'C:\Program Files\Python310\python.exe -m pip install --upgrade pip' command.

C:\Program Files\Python310\Scripts>mypy PROGRAM
'mypy' is not recognized as an internal or external command,
operable program or batch file.
```

The following screenshot shows the error analysis of the main file.

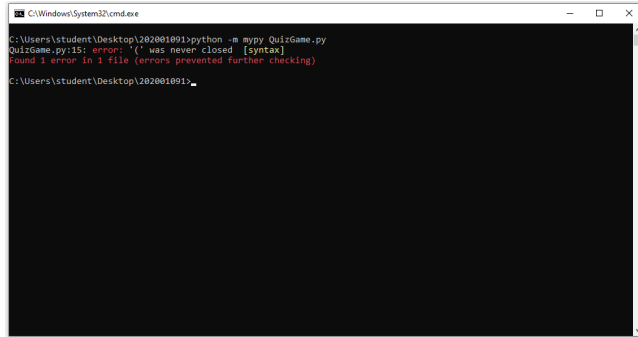


```
File Edit Selection View Go Run Terminal Help
main.py - Visual Studio Code

main.py x readme.md
C:\Users\student\Desktop\202001091>python -m mypy main.py
main.py:6: error: invalid syntax. Perhaps you forgot a comma? [syntax]
Found 1 error in 1 file (errors prevented further checking)

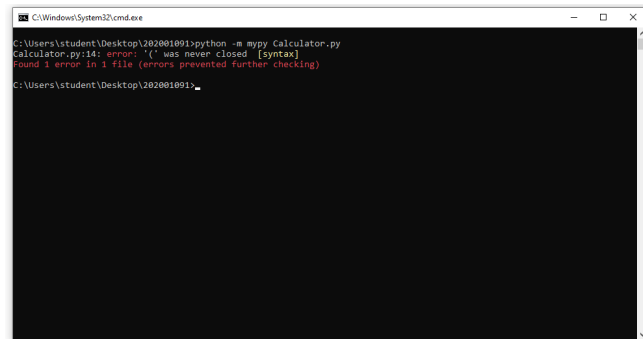
1 import random
2
3 option = ["stone", "paper", "scissors"]
4
5 print("Welcome to Rock paper scissors Game")
6 print("By - Somen")
7
8 comp_choice = 0
9 user_choice = 0
10
11 def sps():
12     s = 1
13     user_point = C:\Users\student\Desktop\202001091>
14     comp_point =
15     for i in opt:
16         print(i)
17         print(s)
18         s+=1
19     for running
20     comp_cho
21     user_cho
22     if (user
23     prin
24     prin
25     if c
26
27
28
29
30
31
32
33
34 elif user_choice == 1:
35     print("Draw, No change in points")
36     print()
37     print()
38 else:
39     print("Computer Wins")
40     print("Adding 1 point to computer")
41     comp_point += 1
42     print("Users point = ", user_point)
43     print("Computer point = ", comp_point)
44     print()
45     print()
46
47 elif comp_choice == "paper":
48     if user_choice == 1:
49
```

The following screenshot shows the error analysis of the QuizGame file.



```
C:\Windows\System32\cmd.exe
C:\Users\student\Desktop\202001091>python -m mpy QuizGame.py
QuizGame.py:15: error: '(' was never closed [syntax]
Found 1 error in 1 file (errors prevented further checking)
C:\Users\student\Desktop\202001091>
```

The following screenshot shows the error analysis of the Calculator file.



```
C:\Windows\System32\cmd.exe
C:\Users\student\Desktop\202001091>python -m mpy Calculator.py
Calculator.py:14: error: '(' was never closed [syntax]
Found 1 error in 1 file (errors prevented further checking)
C:\Users\student\Desktop\202001091>
```

The following screenshot shows the error analysis of the battery file.

The screenshot shows a Visual Studio Code editor with a file named `battery.py` open. The code in the editor is as follows:

```
1 # pip install psutil
2 import psutil
3
4 battery = psutil.sensors_battery()
5 plugged = battery.power_plugged
6 percent = battery.percent
7
8 if percent <= 30 and plugged==True:
9
10     # pip install py-notifier
11     # pip install win10toast
12     from pyntifier import Notification
13
14     Notification(
15         title="Battery low",
16         description=str(percent) + "% battery left",
17         duration=5, # Duration in seconds
18     ).send()
19
20
```

A terminal window is open, showing the command `C:\Users\student\Desktop\202001091> python -m mpy battery.py` and the resulting error message:

```
C:\Users\student\Desktop\202001091> python -m mpy battery.py
battery.py:15: error: invalid syntax. Perhaps you forgot a comma? [syntax]
Found 1 error in 1 file (errors prevented further checking)
```

The following screenshot shows the error analysis of the `internet_connection_check` file.

The screenshot shows a Visual Studio Code editor with a file named `internet_connection_check.py` open. The code in the editor is as follows:

```
1 import requests
2 from requests.exceptions import ConnectionError
3
4 def internet_connection_test():
5     url = "https://www.google.com/"
6     print(f'Attempting to connect to {url} to determine Internet connection status.')
7
8     try:
9         print(url)
10        resp = requests.get(url, timeout = 10)
11        resp.text
12        resp.status_code
13        print(f'Connection to {url}')
14        return True
15    except ConnectionError as e:
16        requests.ConnectionError
17        print(f'Failed to connect to {url}')
18        return False
19    except:
20        print(f'Failed with unparsed error: {e}')
21        return False
22
23 internet_connection_test()
24
```

A terminal window is open, showing the command `C:\Users\student\Desktop\202001091> python -m mpy internet_connection.py` and the resulting error message:

```
C:\Users\student\Desktop\202001091> python -m mpy internet_connection.py
mpy: can't read file 'internet_connection.py': No such file or directory
C:\Users\student\Desktop\202001091> python -m mpy internet_connection_check.py
internet_connection_check.py:17: error: '(' was never closed [syntax]
Found 1 error in 1 file (errors prevented further checking)
```