

IT 314

Software Engineering

Lab 5 : Static Analysis

Student Name : Abhay Suvagiya

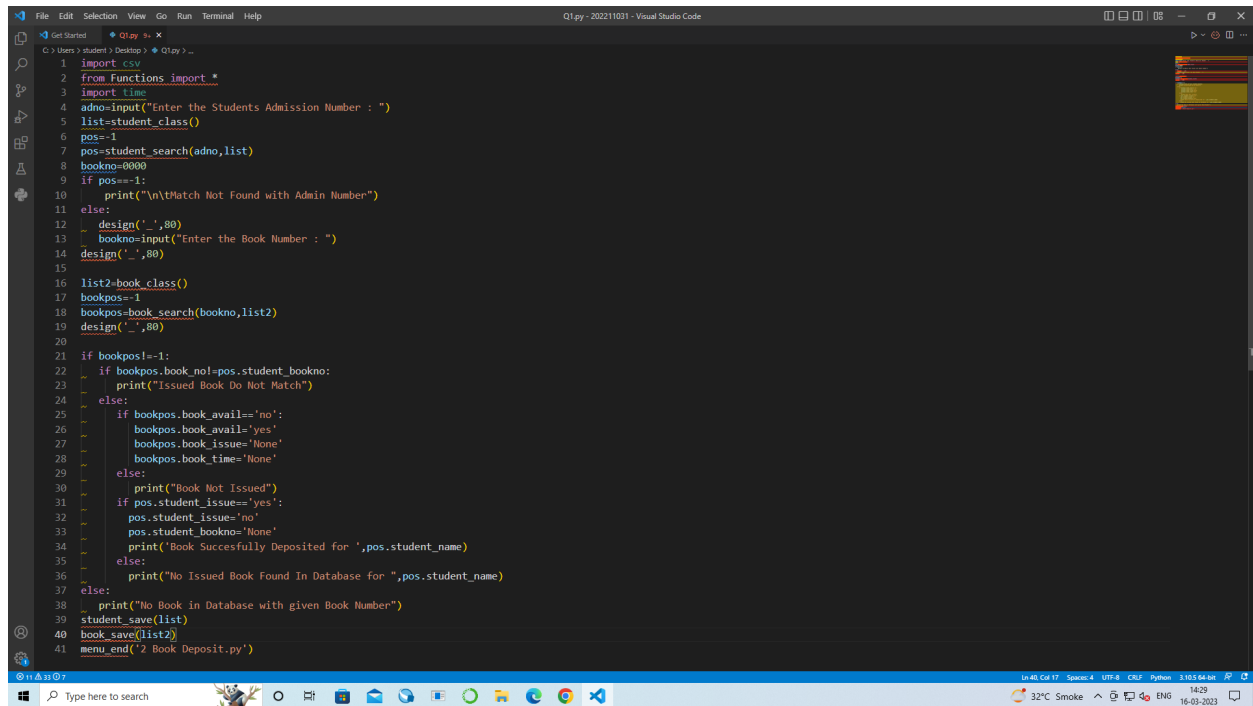
Student ID: 202001171

Selected tool and GitHub Repo

I will be using the pylint tool for python.

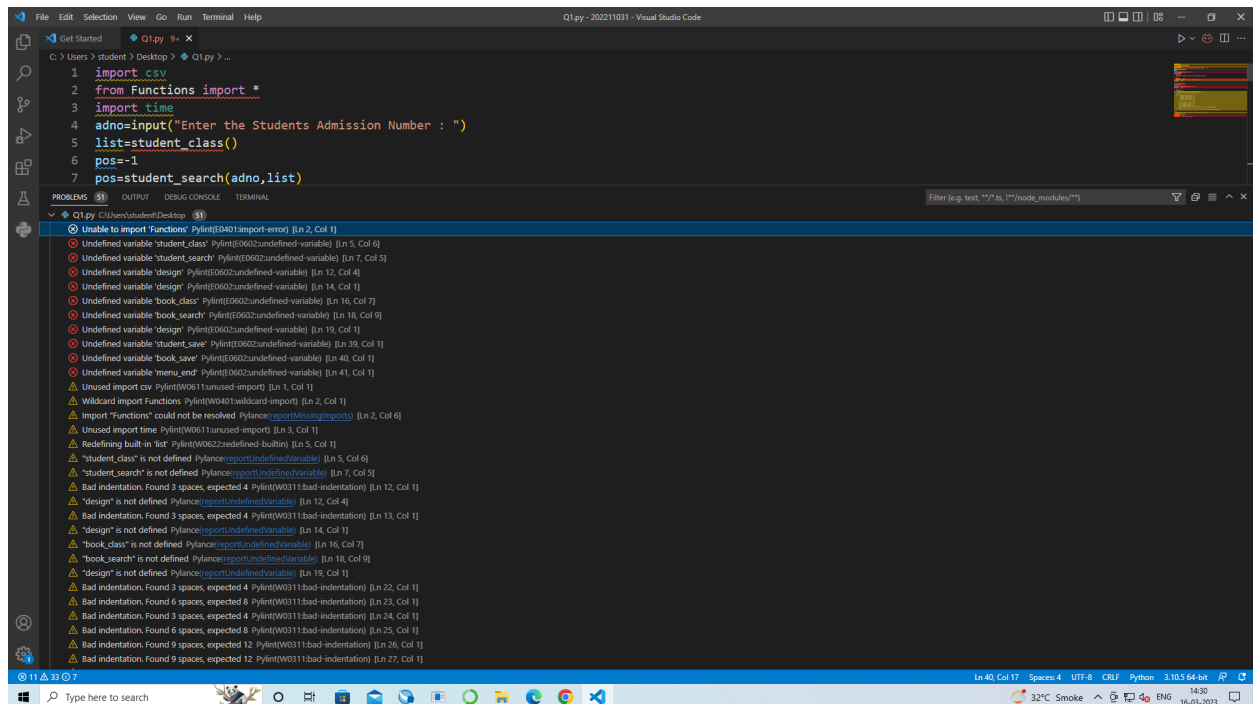
Github repo : <https://github.com/mebinjohnson/Library-Management-System>

1. <https://github.com/mebinjohnson/Library-Management-System/blob/master/2%20Book%20Deposit.py>



```
1 import csv
2 from Functions import *
3 import time
4 adno=input("Enter the Students Admission Number : ")
5 list=student_class()
6 pos=1
7 pos=student_search(adno,list)
8 bookno=0000
9 if pos==-1:
10     print("\n\tMatch Not Found with Admin Number")
11 else:
12     design('_',80)
13     bookno=input("Enter the Book Number : ")
14     design('_',80)
15
16 list2=book_class()
17 bookpos=1
18 bookpos=book_search(bookno,list2)
19 design('_',80)
20
21 if bookpos!=-1:
22     if bookpos.book_no!=pos.student_bookno:
23         print("Issued Book Do Not Match")
24     else:
25         if bookpos.book_avail=='no':
26             bookpos.book_avail='yes'
27             bookpos.book_issue='None'
28             bookpos.book_time='None'
29         else:
30             print("Book Not Issued")
31             if pos.student_issue=='yes':
32                 pos.student_issue='no'
33                 pos.student_bookno='None'
34             print('Book Successfully Deposited for ',pos.student_name)
35         else:
36             print("No Issued Book Found In Database for ",pos.student_name)
37     else:
38         print("No Book in Database with given Book Number")
39 student_save(list)
40 book_save(list2)
41 menu_end("2 Book Deposit.py")
```

TOOL OUTPUT :-



```
1 import csv
2 from Functions import *
3 import time
4 adno=input("Enter the Students Admission Number : ")
5 list=student_class()
6 pos=1
7 pos=student_search(adno,list)
```

PROBLEMS

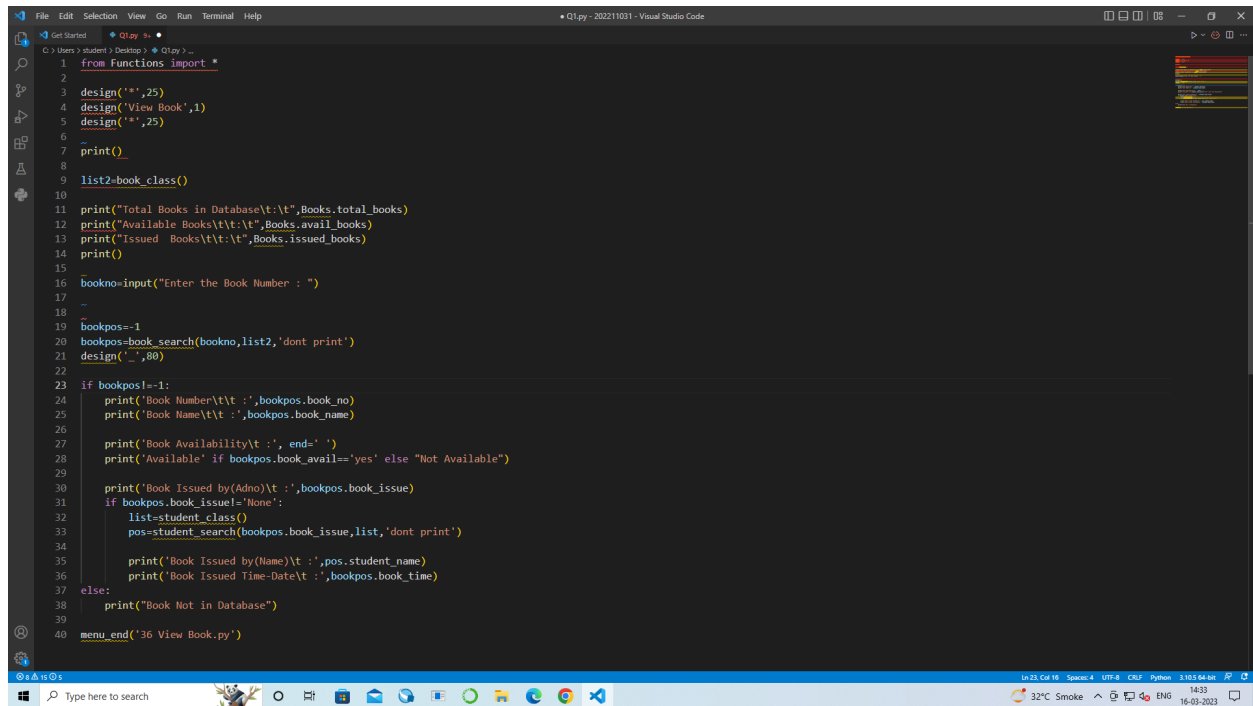
- Unable to import 'Functions'. Pylint(E0401:import-error) [Ln 2, Col 1]
- Undefined variable 'student_class'. Pylint(E0602:undefined-variable) [Ln 5, Col 6]
- Undefined variable 'student_search'. Pylint(E0602:undefined-variable) [Ln 7, Col 5]
- Undefined variable 'design'. Pylint(E0602:undefined-variable) [Ln 12, Col 4]
- Undefined variable 'design'. Pylint(E0602:undefined-variable) [Ln 14, Col 1]
- Undefined variable 'book_class'. Pylint(E0602:undefined-variable) [Ln 16, Col 7]
- Undefined variable 'book_search'. Pylint(E0602:undefined-variable) [Ln 18, Col 9]
- Undefined variable 'design'. Pylint(E0602:undefined-variable) [Ln 19, Col 1]
- Undefined variable 'student_save'. Pylint(E0602:undefined-variable) [Ln 39, Col 1]
- Undefined variable 'book_save'. Pylint(E0602:undefined-variable) [Ln 40, Col 1]
- Undefined variable 'menu_end'. Pylint(E0602:undefined-variable) [Ln 41, Col 1]
- Unused import csv. Pylint(W0611:unused-import) [Ln 1, Col 1]
- Wildcard import functions. Pylint(W0401:wildcard-import) [Ln 2, Col 1]
- Import "Functions" could not be resolved. Pylance(reportMissingImports) [Ln 2, Col 6]
- Unused import time. Pylint(W0611:unused-import) [Ln 3, Col 1]
- Redefining built-in 'list'. Pylint(W0622:redefined-builtin) [Ln 5, Col 1]
- "student_class" is not defined. Pylance(reportUndefinedVariable) [Ln 5, Col 6]
- "student_search" is not defined. Pylance(reportUndefinedVariable) [Ln 7, Col 5]
- Bad indentation. Found 3 spaces, expected 4. Pylint(W0311:bad-indentation) [Ln 12, Col 1]
- "design" is not defined. Pylance(reportUndefinedVariable) [Ln 12, Col 4]
- Bad indentation. Found 3 spaces, expected 4. Pylint(W0311:bad-indentation) [Ln 13, Col 1]
- "design" is not defined. Pylance(reportUndefinedVariable) [Ln 14, Col 1]
- "book_class" is not defined. Pylance(reportUndefinedVariable) [Ln 16, Col 7]
- "book_search" is not defined. Pylance(reportUndefinedVariable) [Ln 18, Col 9]
- "design" is not defined. Pylance(reportUndefinedVariable) [Ln 19, Col 1]
- Bad indentation. Found 3 spaces, expected 4. Pylint(W0311:bad-indentation) [Ln 22, Col 1]
- Bad indentation. Found 6 spaces, expected 8. Pylint(W0311:bad-indentation) [Ln 23, Col 1]
- Bad indentation. Found 3 spaces, expected 4. Pylint(W0311:bad-indentation) [Ln 24, Col 1]
- Bad indentation. Found 6 spaces, expected 8. Pylint(W0311:bad-indentation) [Ln 25, Col 1]
- Bad indentation. Found 9 spaces, expected 12. Pylint(W0311:bad-indentation) [Ln 26, Col 1]
- Bad indentation. Found 9 spaces, expected 12. Pylint(W0311:bad-indentation) [Ln 27, Col 1]

2. <https://github.com/mebinjohnson/Library-Management-System/blob/master/34%20Books%20Record.py>

[illegible]

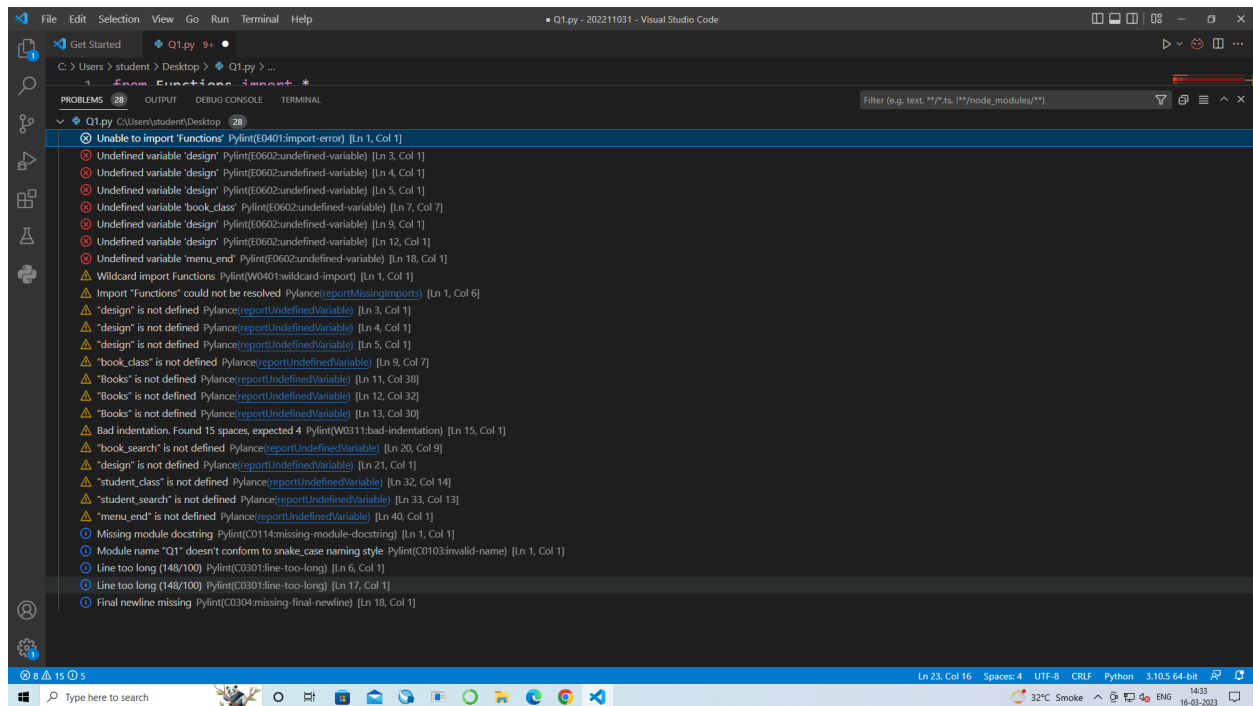
TOOL OUTPUT :-

3. <https://github.com/mebinjohnson/Library-Management-System/blob/master/36%20View%20Book.py>



```
1 from Functions import *
2
3 design('',25)
4 design('View Book',1)
5 design('',25)
6
7 print()
8
9 list2=book_class()
10
11 print("Total Books in Database\t:",Books.total_books)
12 print("Available Books\t:\t",Books.avail_books)
13 print("Issued Books\t:\t",Books.issued_books)
14 print()
15
16 bookno=input("Enter the Book Number : ")
17
18
19 bookpos=-1
20 bookpos=book_search(bookno,list2,'dont print')
21 design('',80)
22
23 if bookpos!=-1:
24     print('Book Number\t\t:',bookpos.book_no)
25     print('Book Name\t\t:',bookpos.book_name)
26
27     print('Book Availability\t:', end=' ')
28     print('Available' if bookpos.book_avail=='yes' else "Not Available")
29
30     print('Book Issued by(Adno)\t\t:',bookpos.book_issue)
31     if bookpos.book_issue!=None:
32         list=student_class()
33         pos=student_search(bookpos.book_issue,list,'dont print')
34
35         print('Book Issued by(Name)\t\t:',pos.student_name)
36         print('Book Issued Time-Date\t\t:',bookpos.book_time)
37     else:
38         print("Book Not in Database")
39
40 menu_end('36 View Book.py')
```

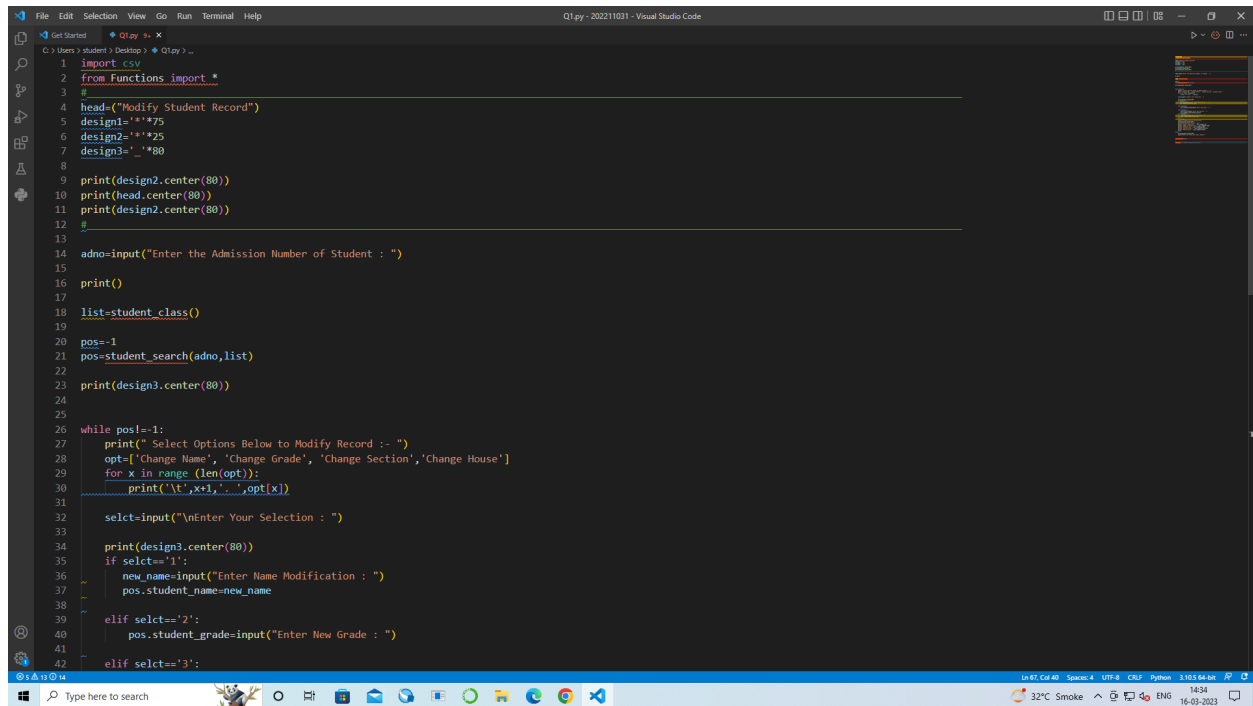
TOOL OUTPUT :-



```
PROBLEMS (28) OUTPUT DEBUG CONSOLE TERMINAL
Filter (e.g. text, **/*, !**/*, node_modules/**)

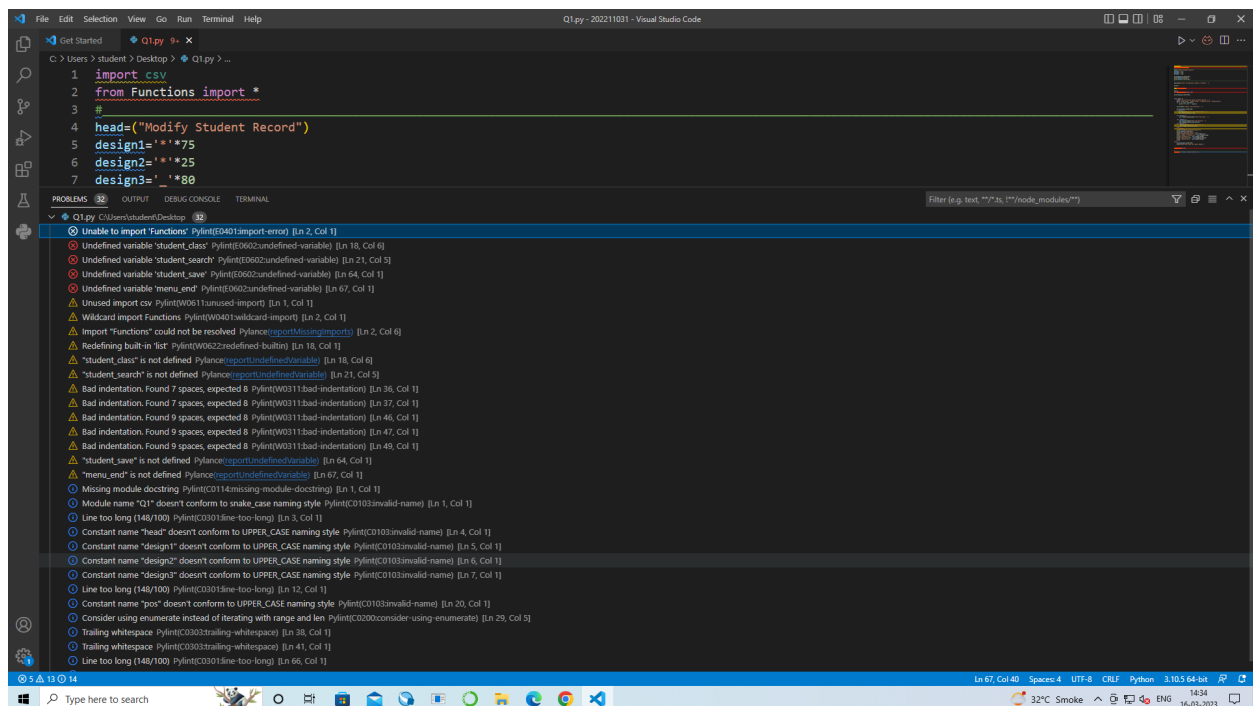
Q1.py C:\Users\student\Desktop (28)
- Unable to import 'Functions' Pylint(E0401:import-error) [Ln 1, Col 1]
- Undefined variable 'design' Pylint(E0602:undefined-variable) [Ln 3, Col 1]
- Undefined variable 'design' Pylint(E0602:undefined-variable) [Ln 4, Col 1]
- Undefined variable 'design' Pylint(E0602:undefined-variable) [Ln 5, Col 1]
- Undefined variable 'book_class' Pylint(E0602:undefined-variable) [Ln 7, Col 7]
- Undefined variable 'design' Pylint(E0602:undefined-variable) [Ln 9, Col 1]
- Undefined variable 'design' Pylint(E0602:undefined-variable) [Ln 12, Col 1]
- Undefined variable 'menu_end' Pylint(E0602:undefined-variable) [Ln 18, Col 1]
- Wildcard import Functions Pylint(W0401:wildcard-import) [Ln 1, Col 1]
- Import 'Functions' could not be resolved Pylance(reportMissingImports) [Ln 1, Col 6]
- 'design' is not defined Pylance(reportUndefinedVariable) [Ln 3, Col 1]
- 'design' is not defined Pylance(reportUndefinedVariable) [Ln 4, Col 1]
- 'design' is not defined Pylance(reportUndefinedVariable) [Ln 5, Col 1]
- 'book_class' is not defined Pylance(reportUndefinedVariable) [Ln 9, Col 7]
- 'Books' is not defined Pylance(reportUndefinedVariable) [Ln 11, Col 38]
- 'Books' is not defined Pylance(reportUndefinedVariable) [Ln 12, Col 32]
- 'Books' is not defined Pylance(reportUndefinedVariable) [Ln 13, Col 30]
- Bad indentation. Found 15 spaces, expected 4 Pylint(W0311:bad-indentation) [Ln 15, Col 1]
- 'book_search' is not defined Pylance(reportUndefinedVariable) [Ln 20, Col 9]
- 'design' is not defined Pylance(reportUndefinedVariable) [Ln 21, Col 1]
- 'student_class' is not defined Pylance(reportUndefinedVariable) [Ln 32, Col 14]
- 'student_search' is not defined Pylance(reportUndefinedVariable) [Ln 33, Col 13]
- 'menu_end' is not defined Pylance(reportUndefinedVariable) [Ln 40, Col 1]
- Missing module docstring Pylint(C0114:missing-module-docstring) [Ln 1, Col 1]
- Module name 'Q1' doesn't conform to snake_case naming style Pylint(C0103:invalid-name) [Ln 1, Col 1]
- Line too long (148/100) Pylint(C0301:line-too-long) [Ln 6, Col 1]
- Line too long (148/100) Pylint(C0301:line-too-long) [Ln 17, Col 1]
- Final newline missing Pylint(C0304:missing-final-newline) [Ln 18, Col 1]
```

4. <https://github.com/mebinjohnson/Library-Management-System/blob/master/32%20Modify%20Student%20Record.py>



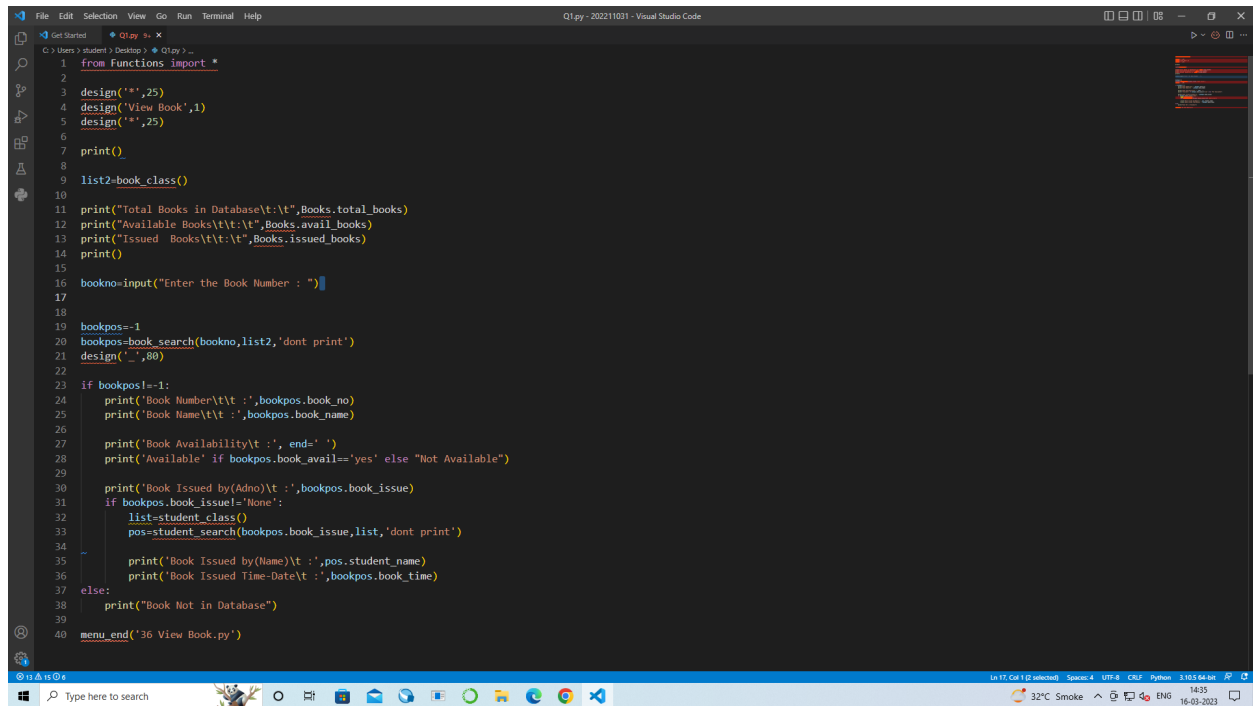
```
1 import csv
2 from Functions import *
3 #
4 head=("Modify Student Record")
5 design1="***75
6 design2="***25
7 design3="***80
8
9 print(design2.center(80))
10 print(head.center(80))
11 print(design2.center(80))
12 #
13
14 adno=input("Enter the Admission Number of Student : ")
15
16 print()
17
18 list=student_class()
19
20 pos=-1
21 pos=student_search(adno,list)
22
23 print(design3.center(80))
24
25
26 while pos!=-1:
27     print("Select Options Below to Modify Record :- ")
28     opt=["Change Name", 'Change Grade', 'Change Section', 'Change House']
29     for x in range (len(opt)):
30         print("\t",x+1," ",opt[x])
31
32     select=input("\nEnter Your Selection : ")
33
34     print(design3.center(80))
35     if select=='1':
36         new_name=input("Enter Name Modification : ")
37         pos.student_name=new_name
38
39     elif select=='2':
40         pos.student_grade=input("Enter New Grade : ")
41
42     elif select=='3':
```

TOOL OUTPUT :-



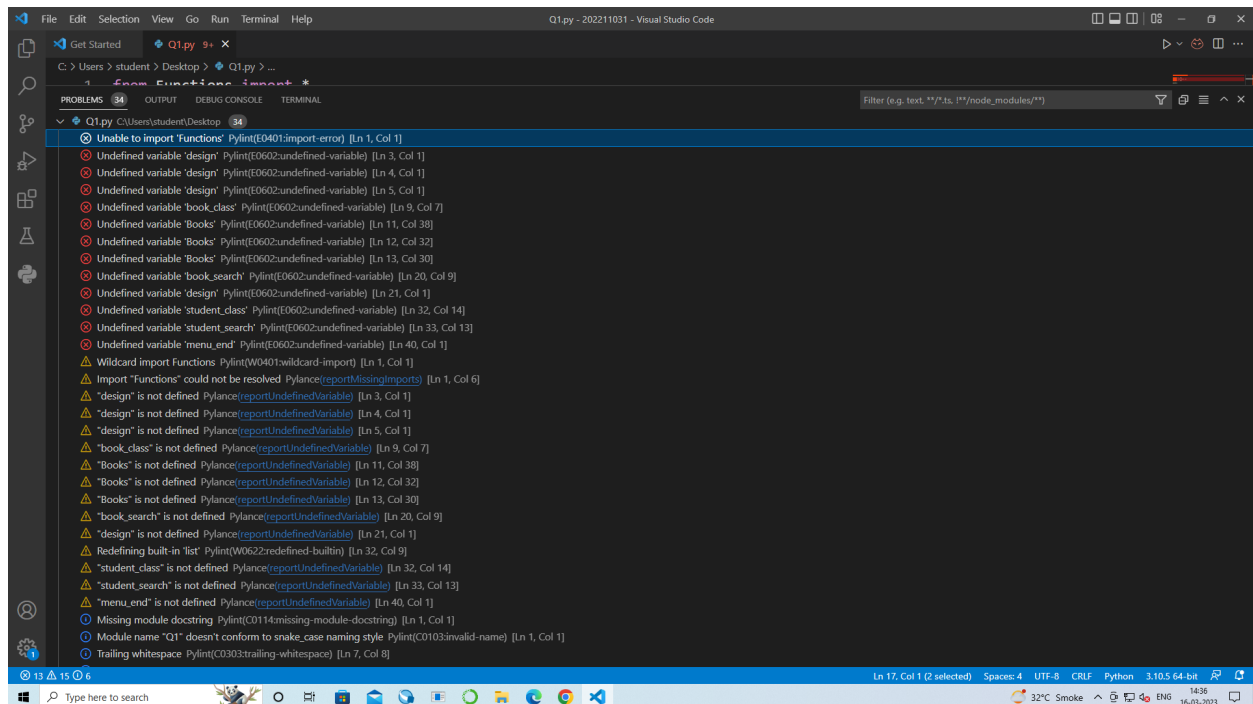
```
PROBLEMS
Q1.py: C:\Users\student\Desktop > Q1.py ...
1 Unable to import 'Functions': Pylint(E0401:import-error) [Ln 2, Col 1]
2 Undefined variable 'student_class': Pylint(E0602:undefined-variable) [Ln 18, Col 6]
3 Undefined variable 'student_search': Pylint(E0602:undefined-variable) [Ln 21, Col 5]
4 Undefined variable 'student_save': Pylint(E0602:undefined-variable) [Ln 64, Col 1]
5 Undefined variable 'menu_end': Pylint(E0602:undefined-variable) [Ln 67, Col 1]
6 Unused import csv: Pylint(W0611:unused-import) [Ln 1, Col 1]
7 Wildcard import Functions: Pylint(W0401:wildcard-import) [Ln 2, Col 1]
8 Import 'Functions' could not be resolved: Pylance(reportMissingImports) [Ln 2, Col 6]
9 Redefining built-in 'list': Pylint(W0022:redefined-builtin) [Ln 18, Col 1]
10 'student_class' is not defined: Pylance(reportUndefinedVariable) [Ln 18, Col 6]
11 'student_search' is not defined: Pylance(reportUndefinedVariable) [Ln 21, Col 5]
12 Bad indentation. Found 7 spaces, expected 8: Pylint(W0311:bad-indentation) [Ln 36, Col 1]
13 Bad indentation. Found 7 spaces, expected 8: Pylint(W0311:bad-indentation) [Ln 37, Col 1]
14 Bad indentation. Found 9 spaces, expected 8: Pylint(W0311:bad-indentation) [Ln 46, Col 1]
15 Bad indentation. Found 9 spaces, expected 8: Pylint(W0311:bad-indentation) [Ln 47, Col 1]
16 Bad indentation. Found 9 spaces, expected 8: Pylint(W0311:bad-indentation) [Ln 49, Col 1]
17 'student_save' is not defined: Pylance(reportUndefinedVariable) [Ln 64, Col 1]
18 'menu_end' is not defined: Pylance(reportUndefinedVariable) [Ln 67, Col 1]
19 Missing module docstring: Pylint(C0111:missing-module-docstring) [Ln 1, Col 1]
20 Module name 'Q1' doesn't conform to snake_case naming style: Pylint(C0103:invalid-name) [Ln 1, Col 1]
21 Line too long (148/100): Pylint(C0301:line-too-long) [Ln 3, Col 1]
22 Constant name 'head' doesn't conform to UPPER_CASE naming style: Pylint(C0103:invalid-name) [Ln 4, Col 1]
23 Constant name 'design1' doesn't conform to UPPER_CASE naming style: Pylint(C0103:invalid-name) [Ln 5, Col 1]
24 Constant name 'design2' doesn't conform to UPPER_CASE naming style: Pylint(C0103:invalid-name) [Ln 6, Col 1]
25 Constant name 'design3' doesn't conform to UPPER_CASE naming style: Pylint(C0103:invalid-name) [Ln 7, Col 1]
26 Line too long (148/100): Pylint(C0301:line-too-long) [Ln 12, Col 1]
27 Constant name 'pos' doesn't conform to UPPER_CASE naming style: Pylint(C0103:invalid-name) [Ln 20, Col 1]
28 Consider using enumerate instead of iterating with range and len: Pylint(C0200:consider-using-enumerate) [Ln 29, Col 5]
29 Trailing whitespace: Pylint(C0303:trailing-whitespace) [Ln 38, Col 1]
30 Trailing whitespace: Pylint(C0303:trailing-whitespace) [Ln 41, Col 1]
31 Line too long (148/100): Pylint(C0301:line-too-long) [Ln 66, Col 1]
```

5. <https://github.com/mebinjohnson/Library-Management-System/blob/master/36%20View%20Book.py>



```
1 from Functions import *
2
3 design('',25)
4 design('View Book',1)
5 design('',25)
6
7 print()
8
9 list2=book_class()
10
11 print("Total Books in Database\t:",Books.total_books)
12 print("Available Books\t:\t",Books.avail_books)
13 print("Issued Books\t:\t",Books.issued_books)
14 print()
15
16 bookno=input("Enter the Book Number : ")
17
18 bookpos=-1
19 bookpos=book_search(bookno,list2,'dont print')
20 design('',80)
21
22 if bookpos!=-1:
23     print('Book Number\t\t:',bookpos.book_no)
24     print('Book Name\t\t:',bookpos.book_name)
25
26     print('Book Availability\t:', end=' ')
27     print('Available' if bookpos.book_avail=='yes' else "Not Available")
28
29     print('Book Issued by(Adno)\t\t:',bookpos.book_issue)
30     if bookpos.book_issue!=None:
31         list=student_class()
32         pos=student_search(bookpos.book_issue,list,'dont print')
33
34         print('Book Issued by(Name)\t\t:',pos.student_name)
35         print('Book Issued Time-Date\t\t:',bookpos.book_time)
36     else:
37         print("Book Not in Database")
38
39 menu_end('36 View Book..py')
```

TOOL OUTPUT :-



```
PROBLEMS 34 OUTPUT DEBUG CONSOLE TERMINAL
Filter (e.g. text, **/*, !**/node_modules/**)

Q1.py C:\Users\student\Desktop 34
- Unable to import 'Functions' Pylint(E0401:import-error) [Ln 1, Col 1]
- Undefined variable 'design' Pylint(E0602:undefined-variable) [Ln 3, Col 1]
- Undefined variable 'design' Pylint(E0602:undefined-variable) [Ln 4, Col 1]
- Undefined variable 'design' Pylint(E0602:undefined-variable) [Ln 5, Col 1]
- Undefined variable 'book_class' Pylint(E0602:undefined-variable) [Ln 9, Col 7]
- Undefined variable 'Books' Pylint(E0602:undefined-variable) [Ln 11, Col 38]
- Undefined variable 'Books' Pylint(E0602:undefined-variable) [Ln 12, Col 32]
- Undefined variable 'Books' Pylint(E0602:undefined-variable) [Ln 13, Col 30]
- Undefined variable 'book_search' Pylint(E0602:undefined-variable) [Ln 20, Col 9]
- Undefined variable 'design' Pylint(E0602:undefined-variable) [Ln 21, Col 1]
- Undefined variable 'student_class' Pylint(E0602:undefined-variable) [Ln 32, Col 14]
- Undefined variable 'student_search' Pylint(E0602:undefined-variable) [Ln 33, Col 13]
- Undefined variable 'menu_end' Pylint(E0602:undefined-variable) [Ln 40, Col 1]
- Wildcard import Functions Pylint(W0401:wildcard-import) [Ln 1, Col 1]
- Import 'Functions' could not be resolved Pylance(reportMissingImports) [Ln 1, Col 6]
- "design" is not defined Pylance(reportUndefinedVariable) [Ln 3, Col 1]
- "design" is not defined Pylance(reportUndefinedVariable) [Ln 4, Col 1]
- "design" is not defined Pylance(reportUndefinedVariable) [Ln 5, Col 1]
- "book_class" is not defined Pylance(reportUndefinedVariable) [Ln 9, Col 7]
- "Books" is not defined Pylance(reportUndefinedVariable) [Ln 11, Col 38]
- "Books" is not defined Pylance(reportUndefinedVariable) [Ln 12, Col 32]
- "Books" is not defined Pylance(reportUndefinedVariable) [Ln 13, Col 30]
- "book_search" is not defined Pylance(reportUndefinedVariable) [Ln 20, Col 9]
- "design" is not defined Pylance(reportUndefinedVariable) [Ln 21, Col 1]
- Redefining built-in 'list' Pylint(W0622:redefined-builtin) [Ln 32, Col 9]
- "student_class" is not defined Pylance(reportUndefinedVariable) [Ln 32, Col 14]
- "student_search" is not defined Pylance(reportUndefinedVariable) [Ln 33, Col 13]
- "menu_end" is not defined Pylance(reportUndefinedVariable) [Ln 40, Col 1]
- Missing module docstring Pylint(C0114:missing-module-docstring) [Ln 1, Col 1]
- Module name "Q1" doesn't conform to snake_case naming style Pylint(C0103:invalid-name) [Ln 1, Col 1]
- Trailing whitespace Pylint(C0303:trailing-whitespace) [Ln 7, Col 8]
```

Understanding of errors :

E0401 : Import Error

E0401 occurs when the import statement of a module fails. It typically indicates that the module you are trying to import cannot be found or there is an issue with the module's code that is preventing it from being imported correctly.

E0602 : Undefined variable

E0602 occurs when you reference a variable that has not been defined in the current scope.

W0401 : wild card import

W0401 is a warning error that is raised when you use a wildcard import statement. A wildcard import statement is a statement that imports all the names defined in a module using the "*" symbol..

W0622 : redefined builtin

W0622 is a warning error that is raised when you define a variable or function with the same name as a built-in Python function or keyword. This can lead to unexpected behavior and bugs in your code.

W0311 : Bad indentation

This warning is raised when there are inconsistent indentation levels in your code. It could occur if you mix tabs and spaces, or if you use the wrong number of spaces for indentation.

C0114 : missing module destroying

This warning is raised when a module is missing a docstring. A docstring is a string literal that appears as the first statement in a module, function, class, or method definition.

C0103 : Invalid name

This warning is raised when a variable or function name does not conform to the naming convention for Python code

C0303 : Trailing white space

This warning is raised when there is trailing whitespace at the end of a line.

C0304 : Missing final newline

This warning is raised when there is no final newline at the end of a file. This can cause issues with some text editors and tools.