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Course: Building Secure Python Applications

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My test table with screen captures support each test cases and pylint results:

| Test case | Input values | Expected output | Actual Output | Pass? |
|------------------|---|---|--|--------------|
| 1a | Yes, Dave, Kadima, 28, Yes, GA, 30101 | Registration successful with summary details | Registration successful with summary details | Yes |
| 1b | No | Registration cancelled | Registration cancelled | Yes |
| 1c | Yes, Dave, kadima, 121, yes, GA, 30101 | Invalid age. You must be between 18 and 120 years old | Invalid age. You must be between 18 and 120 years old | Yes |
| 1d | Yes, Dave, Kadima, 10, yes, GA, 30101 | Invalid age. You must be between 18 and 120 years old | Invalid age. You must be between 18 and 120 years old | Yes |
| 1e | Yes, Dave, Kadima, 28, No, GA, 30101 | Sorry, only U.S. Citizens can register to vote. | Sorry, only U.S. Citizens can register to vote. | Yes |
| 1f | Yes, Dave, Kadima, 28, yes, Georgia, 30101 | Invalid state code. Please enter a valid 2- letter state abbreviation | Invalid state code. Please enter a valid 2- letter state abbreviation. | Yes |
| 1g | Yes, Dave, Kadima, 28, Yes, GA, 3010101 | Invalid zipcode. Please | Invalid zipcode. Please | Yes |

| | | | | |
|--|--|-------------------------|-------------------------|--|
| | | enter a 5-digit number. | enter a 5-digit number. | |
|--|--|-------------------------|-------------------------|--|

2. Screen captures:

1a:

```
/Users/dave/Discussion_Projects/.venv/bin/python /Users/dave/Discussion_Projects/lab1.py
Welcome to the Voter Registration Application!
Do you want to continue with Voter Registration? (yes/no): yes
Enter your first name: Dave
Enter your last name: Kadima
Enter your age: 28
Are you a U.S. citizen? (yes/no): yes
Enter your state (2-letter code): GA
Enter your 5-digit zipcode: 30101

-----
VOTER REGISTRATION SUMMARY
-----
Name:      Dave Kadima
Age:       28
U.S. Citizen: Yes
State:     GA
Zipcode:   30101
-----
Your voter registration card will arrive in a few weeks!
-----

Process finished with exit code 0
```

1b:

```
/Users/dave/Discussion_Projects/.venv/bin/python /Users/dave/Discussion_Projects/lab1.py
Welcome to the Voter Registration Application!
Do you want to continue with Voter Registration? (yes/no): no
Registration cancelled.

Process finished with exit code 0
```

1c:

```

/Users/dave/Discussion_Projects/.venv/bin/python /Users/dave/Discussion_Projects/lab1.py
Welcome to the Voter Registration Application!
Do you want to continue with Voter Registration? (yes/no): yes
Enter your first name: Dave
Enter your last name: Kadima
Enter your age: 121
Invalid age. You must be between 18 and 120 years old.
Enter your age: |

```

1d:

```

/Users/dave/Discussion_Projects/.venv/bin/python /Users/dave/Discussion_Projects/lab1.py
Welcome to the Voter Registration Application!
Do you want to continue with Voter Registration? (yes/no): yes
Enter your first name: Dave
Enter your last name: Kadima
Enter your age: 10
Invalid age. You must be between 18 and 120 years old.
Enter your age: |

```

1e:

```

/Users/dave/Discussion_Projects/.venv/bin/python /Users/dave/Discussion_Projects/lab1.py
Welcome to the Voter Registration Application!
Do you want to continue with Voter Registration? (yes/no): yes
Enter your first name: Dave
Enter your last name: Kadima
Enter your age: 20
Are you a U.S. citizen? (yes/no): no
Sorry, only U.S. citizens can register to vote.
Process finished with exit code 0

```

1f:

```

/Users/dave/Discussion_Projects/.venv/bin/python /Users/dave/Discussion_Projects/lab1.py
Welcome to the Voter Registration Application!
Do you want to continue with Voter Registration? (yes/no): yes
Enter your first name: Dave
Enter your last name: Kadima
Enter your age: 20
Are you a U.S. citizen? (yes/no): yes
Enter your state (2-letter code): Georgia
Invalid state code. Please enter a valid 2-letter state abbreviation.
Enter your state (2 letters code):

```

1g:

```

/Users/dave/Discussion_Projects/.venv/bin/python /Users/dave/Discussion_Projects/lab1.py
Welcome to the Voter Registration Application!
Do you want to continue with Voter Registration? (yes/no): yes
Enter your first name: Dave
Enter your last name: Kadima
Enter your age: 20
Are you a U.S. citizen? (yes/no): yes
Enter your state (2-letter code): ga
Enter your 5-digit zipcode: 3010101
Invalid zipcode. Please enter a 5-digit number.
Enter your 5-digit zipcode:

```

3. Pylint Results:

When I ran my Lab1 file through Pylint, I noticed several issues that need to be fixed to improve my code quality.

First, Pylint flagged multiple lines as being too long. Specifically, lines 9, 10, 11, 19, 25, 31, 41, 51, 58, and 62 exceeded the recommended 100-character limit. This makes my code harder to read and could cause problems when viewing it on smaller screens. I need to break these long lines into shorter ones to improve readability.

Another issue is unnecessary parentheses after the "not" keyword on line 37. Pylint pointed out that the parentheses were not needed and only made the code harder to read. Removing them will make the condition clearer.

The file name is not in snake_case. Right now, the file is named Lab1.py, but Python's naming convention suggests that it should be lowercase and use underscores if needed, like lab1.py. Pylint also mentioned that one of my functions is missing a docstring on line 7. Every function should have a short description explaining what it does. Adding a docstring will help both me and others understand the purpose of the function without having to analyze the entire code.

Another issue is that I redefined a variable named state in two different places (lines 7 and 56). This means that I used the same variable name in two different parts of the program, which could cause unexpected behavior because one definition might overwrite the other. I need to rename one of them to something more specific so that they don't conflict.

I used an f-string incorrectly on line 76. Pylint warned me that I used an f-string without inserting any variables, which means it wasn't necessary in that case. I need to either add a variable inside the f-string or remove the f if it's just a regular string. My Pylint score was 6.74/10.

Screen Captures:

```
(base) dave@Josh-MBP Discussion_projects % pylint Lab1.py
***** Module Lab1
Lab1.py:9:0: C0301: Line too long (115/100) (line-too-long)
Lab1.py:10:0: C0301: Line too long (115/100) (line-too-long)
Lab1.py:11:0: C0301: Line too long (115/100) (line-too-long)
Lab1.py:19:0: C0301: Line too long (108/100) (line-too-long)
Lab1.py:25:0: C0301: Line too long (112/100) (line-too-long)
Lab1.py:31:0: C0301: Line too long (116/100) (line-too-long)
Lab1.py:37:0: C0325: Unnecessary parens after 'not' keyword (superfluous-parens)
Lab1.py:41:0: C0301: Line too long (120/100) (line-too-long)
Lab1.py:51:0: C0301: Line too long (102/100) (line-too-long)
Lab1.py:58:0: C0301: Line too long (106/100) (line-too-long)
Lab1.py:62:0: C0301: Line too long (106/100) (line-too-long)
Lab1.py:1:0: C0103: Module name "Lab1" doesn't conform to snake_case naming style (invalid-name)
Lab1.py:7:0: C0116: Missing function or method docstring (missing-function-docstring)
Lab1.py:7:19: W0621: Redefining name 'state' from outer scope (line 56) (redefined-outer-name)
Lab1.py:76:34: W1309: Using an f-string that does not have any interpolated variables (f-string-without-interpolation)

-----
Your code has been rated at 6.74/10
```

When I ran pylint on my lab1.py file after fixing previous issues, it gave me a message about a missing final newline. This means the file doesn't end with a blank line after the last line of code. The score improved to 9.62/10.

```
(base) dave@Josh-MBP Discussion_projects % pylint lab1.py
***** Module lab1
lab1.py:51:0: C0304: Final newline missing (missing-final-newline)

-----
Your code has been rated at 9.62/10 (previous run: 8.57/10, +1.04)
```

After fixing the issue and running pylint again, the message shows that my code is now rated 10.00/10, which means there are no more issues, and my code follows the standards perfectly.

```
(base) dave@Josh-MBP Discussion_projects % pylint lab1.py

-----
Your code has been rated at 10.00/10 (previous run: 9.62/10, +0.38)
```