

Assignment – 8

AI Assisted coding

2303A51897

Task 1: Email Validation

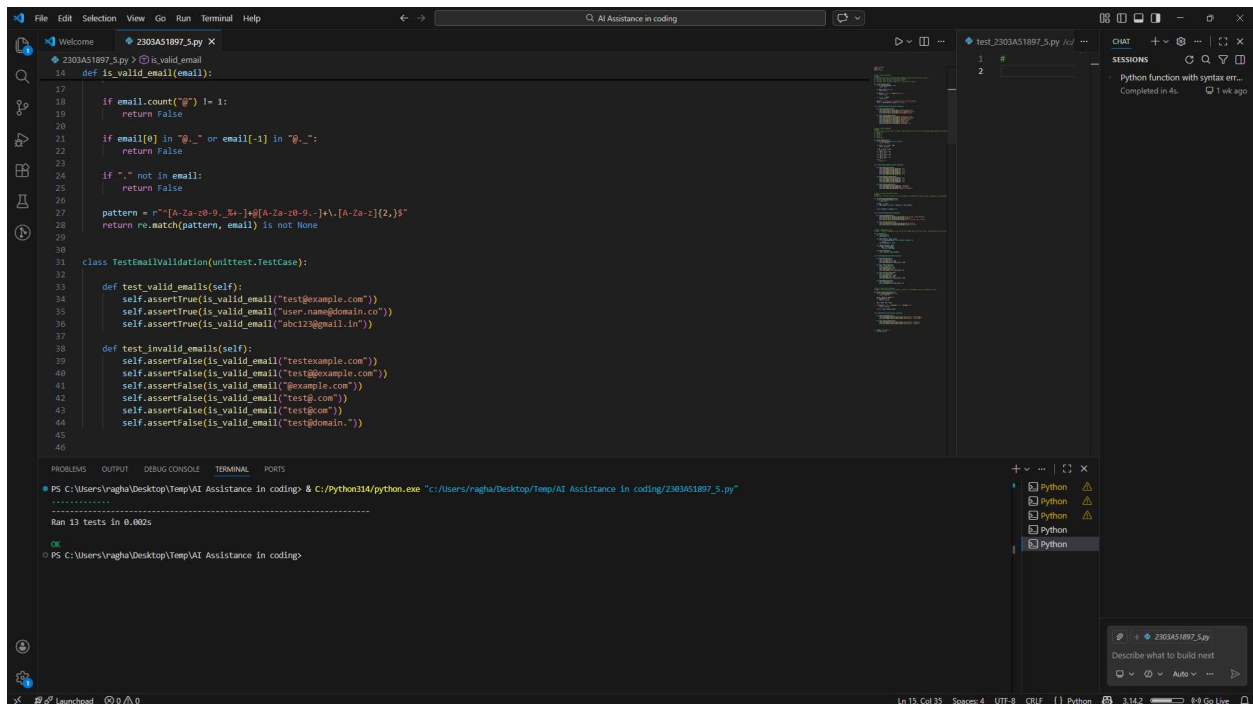
PROMPT :

Implement a function to validate email addresses based on the following criteria:

- The email must contain exactly one "@" symbol.

- The email must not start or end with "@" or ".".

- The email must contain at least one "." after the "@" symbol.



```
File Edit Selection View Go Run Terminal Help
2303A51897_Spy X
2303A51897_Spy.py is_valid_email
14 def is_valid_email(email):
17
18     if email.count("@") != 1:
19         return False
20
21     if email[0] in "@_." or email[-1] in "@_." :
22         return False
23
24     if "." not in email:
25         return False
26
27     pattern = r"^[A-Za-z0-9_+]*@[A-Za-z0-9-]+\.[A-Za-z]{2,}$"
28     return re.match(pattern, email) is not None
29
30
31 class TestEmailValidation(unittest.TestCase):
32
33     def test_valid_email(self):
34         self.assertTrue(is_valid_email("test@example.com"))
35         self.assertTrue(is_valid_email("user.name@domain.co"))
36         self.assertTrue(is_valid_email("abc123@mail.in"))
37
38     def test_invalid_email(self):
39         self.assertFalse(is_valid_email("testexample.com"))
40         self.assertFalse(is_valid_email("test@example.com."))
41         self.assertFalse(is_valid_email("@example.com"))
42         self.assertFalse(is_valid_email("test@.com"))
43         self.assertFalse(is_valid_email("test@com"))
44         self.assertFalse(is_valid_email("test@domain.."))
45
46
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\rqgha\Desktop\Temp\AI Assistance in coding> & C:/Python314/python.exe "C:/Users/rqgha/Desktop/Temp/AI Assistance in coding/2303A51897_Spy.py"
.....
Run 11 tests in 0.002s
OK
PS C:\Users\rqgha\Desktop\Temp\AI Assistance in coding>
```

Task 2: Grade Assignment

PROMPT :

Create a function that takes a student's score (0-100) and returns the corresponding grade based on the following scale:

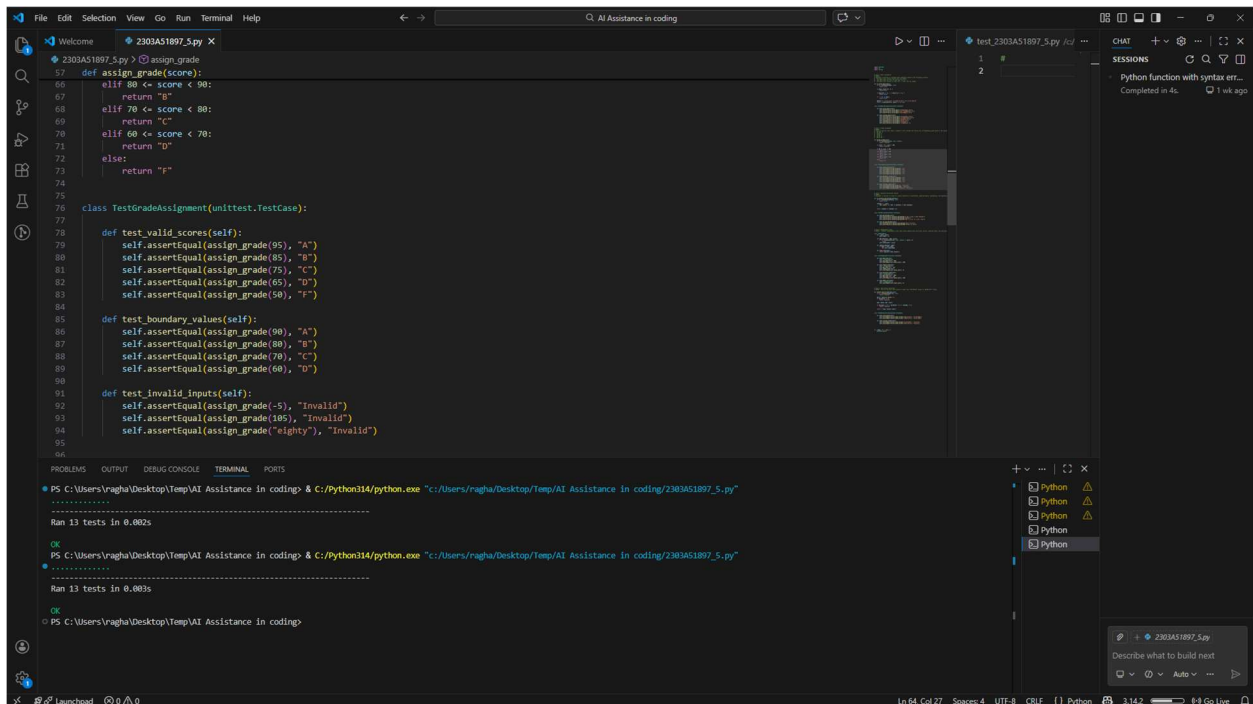
- 90-100: A

- 80-89: B

- 70-79: C

- 60-69: D

- Below 60: F

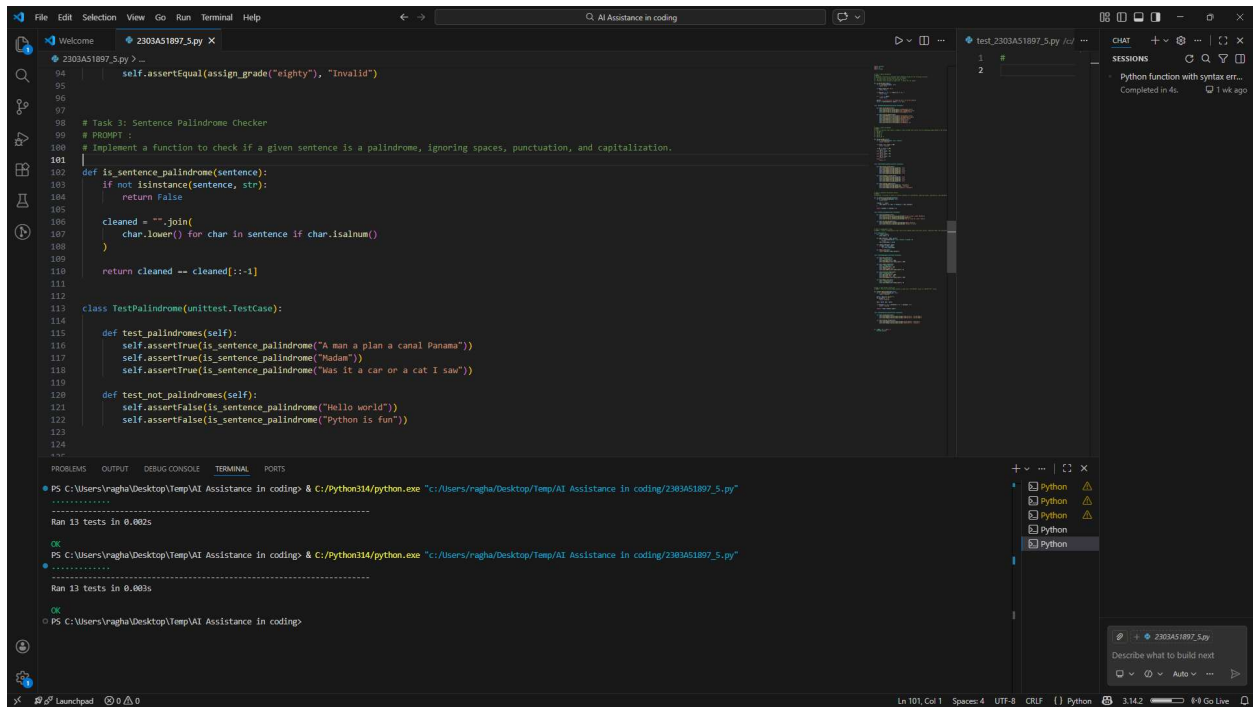


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2303AS1897_Spy X
2303AS1897_Spy > assign_grade
57 def assign_grade(score):
58     if 80 <= score < 90:
59         return "B"
60     elif 70 <= score < 80:
61         return "C"
62     elif 60 <= score < 70:
63         return "D"
64     else:
65         return "F"
66
67 class TestGradeAssignment(unittest.TestCase):
68
69     def test_valid_scores(self):
70         self.assertEqual(assign_grade(95), "A")
71         self.assertEqual(assign_grade(85), "B")
72         self.assertEqual(assign_grade(75), "C")
73         self.assertEqual(assign_grade(65), "D")
74         self.assertEqual(assign_grade(55), "F")
75
76     def test_boundary_values(self):
77         self.assertEqual(assign_grade(90), "A")
78         self.assertEqual(assign_grade(80), "B")
79         self.assertEqual(assign_grade(70), "C")
80         self.assertEqual(assign_grade(60), "D")
81
82     def test_invalid_inputs(self):
83         self.assertEqual(assign_grade(-5), "Invalid")
84         self.assertEqual(assign_grade(105), "Invalid")
85         self.assertEqual(assign_grade("signy"), "Invalid")
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Task 3: Sentence Palindrome Checker

PROMPT :

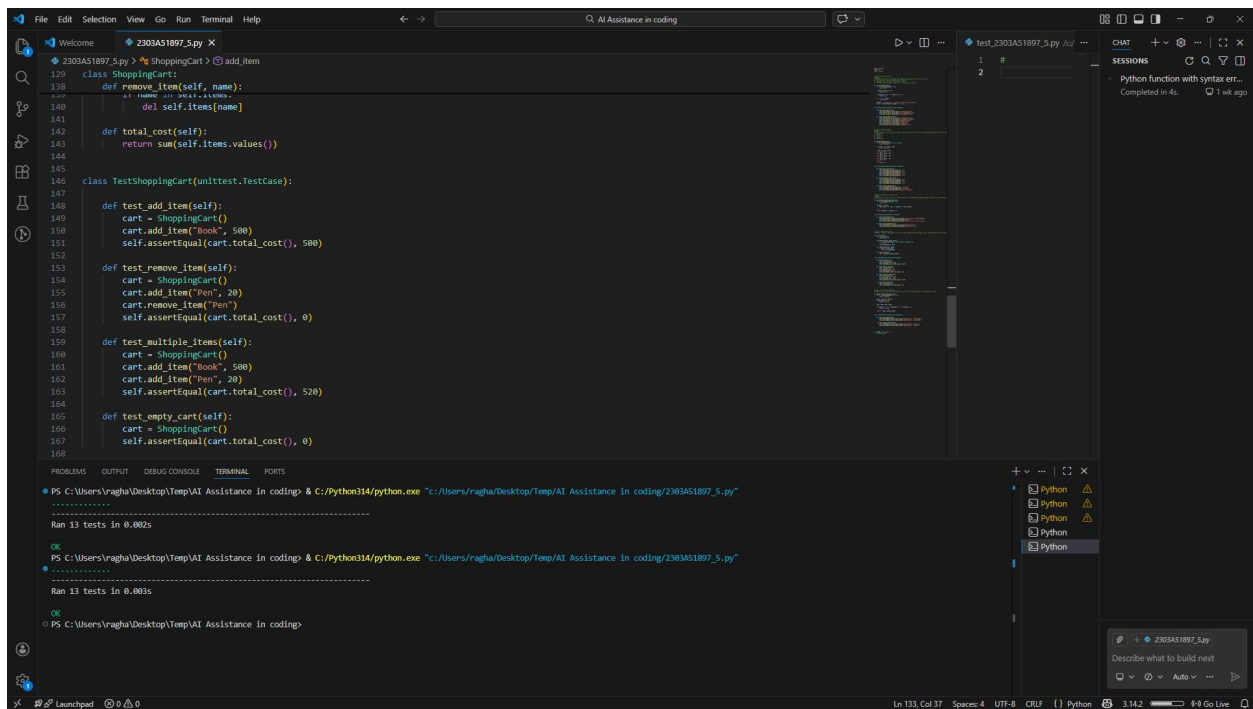
Implement a function to check if a given sentence is a palindrome, ignoring spaces, punctuation, and capitalization.



```
File Edit Selection View Go Run Terminal Help
2303AS1897_5.py X
self.assertEqual(assign_grade("eighty"), "Invalid")
# Task 3: Sentence Palindrome Checker
# PROMPT :
# Implement a function to check if a given sentence is a palindrome, ignoring spaces, punctuation, and capitalization.
101
def is_sentence_palindrome(sentence):
102
103     if not isinstance(sentence, str):
104         return False
105
106     cleaned = "".join(
107         char.lower() for char in sentence if char.isalnum()
108     )
109
110     return cleaned == cleaned[::-1]
111
112
class TestPalindrome(unittest.TestCase):
113
114     def test_palindromes(self):
115         self.assertTrue(is_sentence_palindrome("A man a plan a canal Panama"))
116         self.assertTrue(is_sentence_palindrome("Madam"))
117         self.assertTrue(is_sentence_palindrome("Was it a car or a cat I saw"))
118
119     def test_not_palindromes(self):
120         self.assertFalse(is_sentence_palindrome("Hello world"))
121         self.assertFalse(is_sentence_palindrome("Python is fun"))
122
123
124
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\ragha\Desktop\Temp\AI Assistance in coding> & C:/Python314/python.exe "c:/Users/ragha/Desktop/Temp/AI Assistance in coding/2303AS1897_5.py"
.....
Ran 13 tests in 0.002s
OK
PS C:\Users\ragha\Desktop\Temp\AI Assistance in coding> & C:/Python314/python.exe "c:/Users/ragha/Desktop/Temp/AI Assistance in coding/2303AS1897_5.py"
.....
Ran 13 tests in 0.003s
OK
PS C:\Users\ragha\Desktop\Temp\AI Assistance in coding>
```

Task 4: ShoppingCart Class

PROMPT : Create a ShoppingCart class that allows adding items with their prices, removing items, and calculating the total cost.



Task 5: Date Format Conversion

PROMPT : Write a function that converts a date from "YYYY-MM-DD" format to "DD-MM-YYYY" format.

