AI-ASSISTED CODING

Assignment Number:8.3

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BATCH – 45

Task 1: Email Validation using TDD

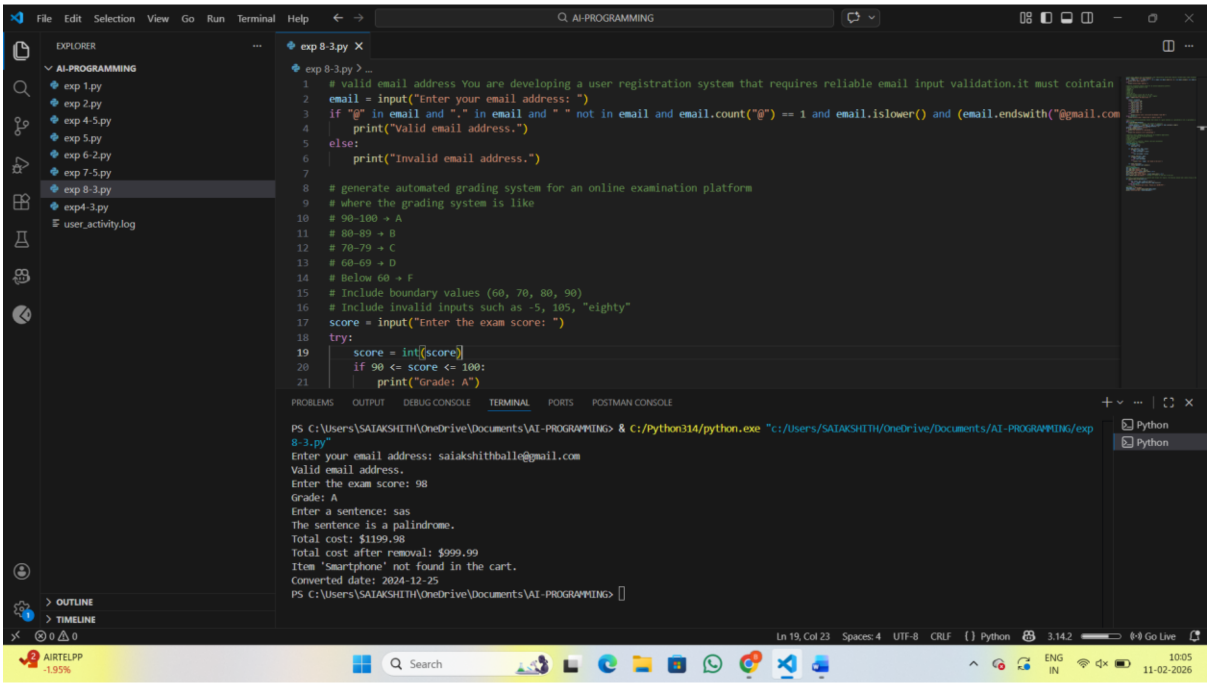
PROMT:

# valid email address You are developing a user registration system that requires reliable email input validation.it must cointain "@" and "." and should not contain any spaces and not allow multiple"@"and should cointain only small letters and should cointain gmail.com or yahoo.com or outlook.com

CODE:

```
email = input("Enter your email address: ")

if "@" in email and "." in email and " " not in email and email.count("@") == 1 and email.islower() and (email.endswith("@gmail.com") or email.endswith("@yahoo.com") or email.endswith("@outlook.com")):

    print("Valid email address.")

else:

    print("Invalid email address.")
```

OUTPUT:



```
# valid email address You are developing a user registration system that requires reliable email input validation.it must cointain
email = input("Enter your email address: ")
if "@" in email and "." in email and " " not in email and email.count("@") == 1 and email.islower() and (email.endswith("@gmail.com
    print("Valid email address.")
else:
    print("Invalid email address.")

# generate automated grading system for an online examination platform
# where the grading system is like
# 90-100 → A
# 80-89 → B
# 70-79 → C
# 60-69 → D
# Below 60 → F
# Include boundary values (60, 70, 80, 90)
# Include invalid inputs such as -5, 105, "eighty"
score = input("Enter the exam score: ")
try:
    score = int(score)
    if 90 <= score <= 100:
        print("Grade: A")
```

```
PS C:\Users\SAIAKSHITH\OneDrive\Documents\AI-PROGRAMMING> & C:/Python314/python.exe "c:/Users/SAIAKSHITH/OneDrive/Documents/AI-PROGRAMMING/exp
8-3.py"
Enter your email address: saiakshithballe@gmail.com
Valid email address.
Enter the exam score: 98
Grade: A
Enter a sentence: sas
The sentence is a palindrome.
Total cost: $1199.98
Total cost after removal: $999.99
Item 'Smartphone' not found in the cart.
Converted date: 2024-12-25
PS C:\Users\SAIAKSHITH\OneDrive\Documents\AI-PROGRAMMING>
```

Task 2: Grade Assignment using Loops

PROMT:

generate automated grading system for an online examination platform

where the grading system is like

90–100 → A

80–89 → B

70–79 → C

60–69 → D

Below 60 → F

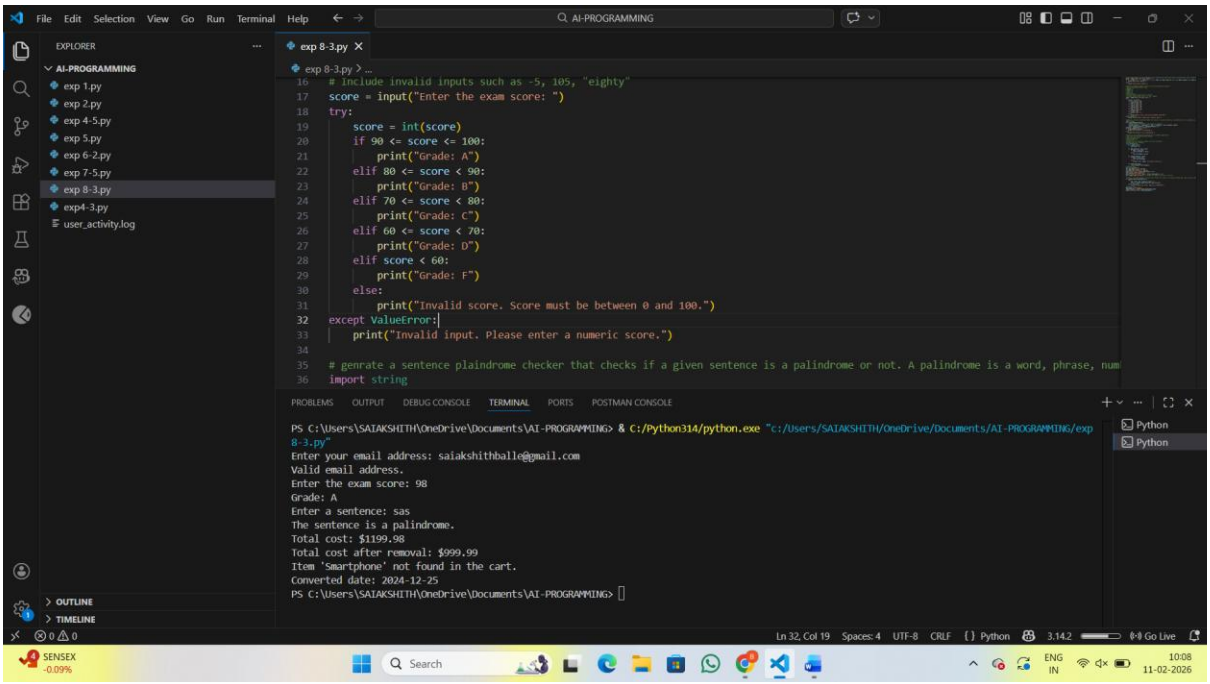
Include boundary values (60, 70, 80, 90)

Include invalid inputs such as -5, 105, "eighty"

CODE:

```
score = input("Enter the exam score: ")

try:
    score = int(score)
    if 90 <= score <= 100:
        print("Grade: A")
    elif 80 <= score < 90:
        print("Grade: B")
    elif 70 <= score < 80:
        print("Grade: C")
    elif 60 <= score < 70:
        print("Grade: D")
    elif score < 60:
        print("Grade: F")
    else:
        print("Invalid score. Score must be between 0 and 100.")
except ValueError:
    print("Invalid input. Please enter a numeric score.")
```

OUTPUT:



```
# Include invalid inputs such as -5, 105, "eighty"
score = input("Enter the exam score: ")
try:
    score = int(score)
    if 90 <= score <= 100:
        print("Grade: A")
    elif 80 <= score < 90:
        print("Grade: B")
    elif 70 <= score < 80:
        print("Grade: C")
    elif 60 <= score < 70:
        print("Grade: D")
    elif score < 60:
        print("Grade: F")
    else:
        print("Invalid score. Score must be between 0 and 100.")
except ValueError:
    print("Invalid input. Please enter a numeric score.")

# genrate a sentence plaindrome checker that checks if a given sentence is a palindrome or not. A palindrome is a word, phrase, num
import string
```

```
PS C:\Users\SAIAKSHITH\OneDrive\Documents\AI-PROGRAMMING> & C:/Python314/python.exe "c:/Users/SAIAKSHITH/OneDrive/Documents/AI-PROGRAMMING/exp
8-3.py"
Enter your email address: saiakshithballe@gmail.com
Valid email address.
Enter the exam score: 98
Grade: A
Enter a sentence: sas
The sentence is a palindrome.
Total cost: $1199.98
Total cost after removal: $999.99
Item 'Smartphone' not found in the cart.
Converted date: 2024-12-25
PS C:\Users\SAIAKSHITH\OneDrive\Documents\AI-PROGRAMMING> 
```

Task 3: Sentence Palindrome Checker

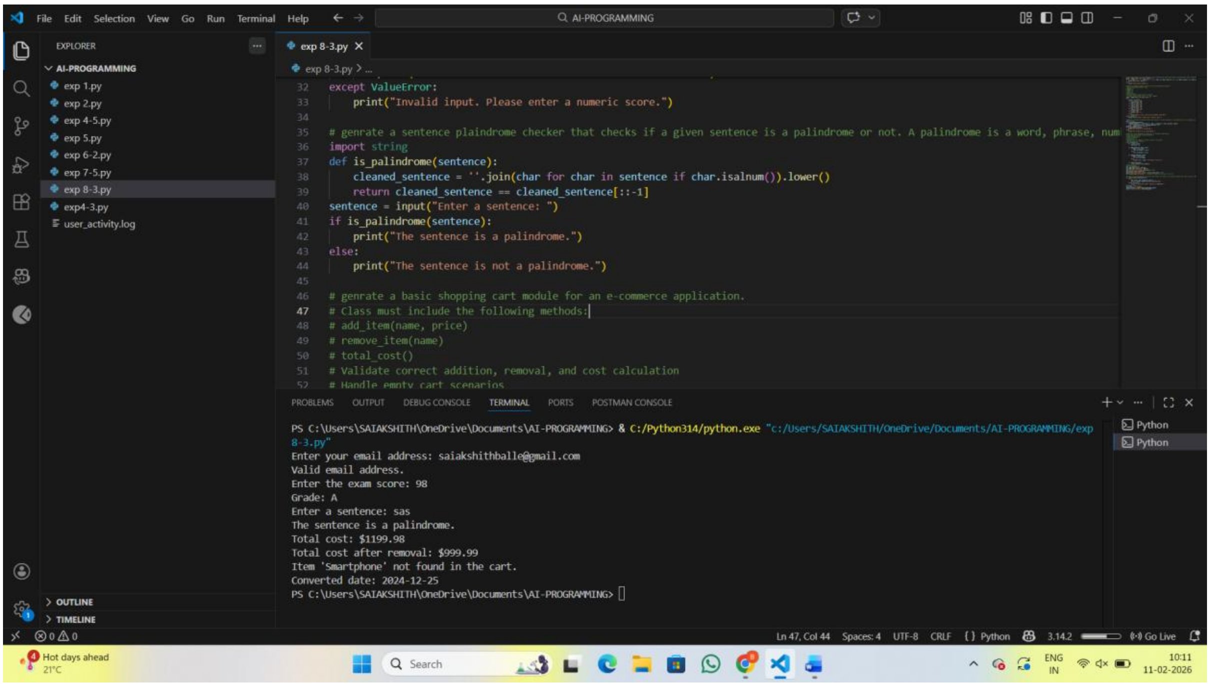
PROMT:

# genrate a sentence plaindrome checker that checks if a given sentence is a palindrome or not. A palindrome is a word, phrase, number, or other sequence of characters that reads the same forward and backward (ignoring spaces, punctuation, and capitalization).

CODE:

```
import string

def is_palindrome(sentence):

    cleaned_sentence = ''.join(char for char in sentence if char.isalnum()).lower()

    return cleaned_sentence == cleaned_sentence[::-1]

sentence = input("Enter a sentence: ")

if is_palindrome(sentence):

    print("The sentence is a palindrome.")

else:

    print("The sentence is not a palindrome.")
```

OUTPUT:



```
except ValueError:
    print("Invalid input. Please enter a numeric score.")

# genrate a sentence plaindrome checker that checks if a given sentence is a palindrome or not. A palindrome is a word, phrase, num
import string
def is_palindrome(sentence):
    cleaned_sentence = ''.join(char for char in sentence if char.isalnum()).lower()
    return cleaned_sentence == cleaned_sentence[::-1]
sentence = input("Enter a sentence: ")
if is_palindrome(sentence):
    print("The sentence is a palindrome.")
else:
    print("The sentence is not a palindrome.")

# genrate a basic shopping cart module for an e-commerce application.
# Class must include the following methods:
# add_item(name, price)
# remove_item(name)
# total_cost()
# Validate correct addition, removal, and cost calculation
# Handle empty cart scenarios
```

```
PS C:\Users\SAIAKSHITH\OneDrive\Documents\AI-PROGRAMMING> & C:/Python314/python.exe "c:/Users/SAIAKSHITH/OneDrive/Documents/AI-PROGRAMMING/exp
8-3.py"
Enter your email address: saiakshithballe@gmail.com
Valid email address.
Enter the exam score: 98
Grade: A
Enter a sentence: sas
The sentence is a palindrome.
Total cost: $1199.98
Total cost after removal: $999.99
Item 'Smartphone' not found in the cart.
Converted date: 2024-12-25
PS C:\Users\SAIAKSHITH\OneDrive\Documents\AI-PROGRAMMING>
```

Task 4: ShoppingCart Class

PROMT:

genrate a basic shopping cart module for an e-commerce application.

Class must include the following methods:

add_item(name, price)

remove_item(name)

total_cost()

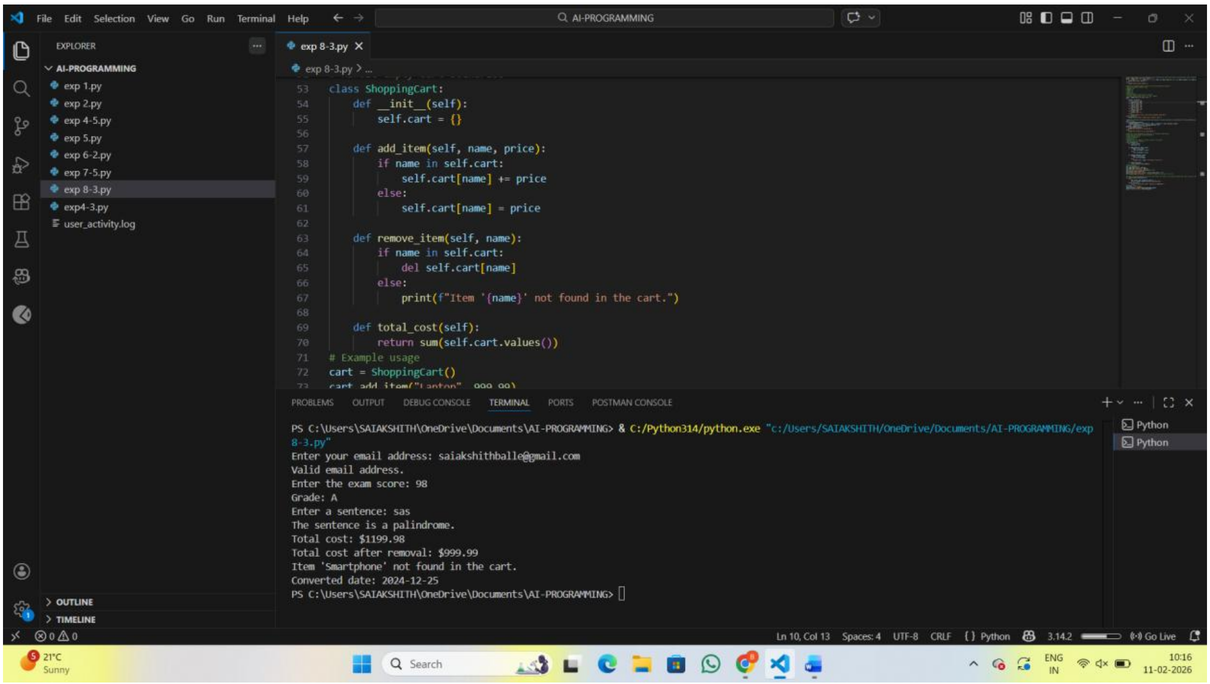
Validate correct addition, removal, and cost calculation

Handle empty cart scenarios

CODE:

```
class ShoppingCart:
    def __init__(self):
        self.cart = {}
    def add_item(self, name, price):
        if name in self.cart:
            self.cart[name] += price
        else:
            self.cart[name] = price

    def remove_item(self, name):
        if name in self.cart:
            del self.cart[name]
        else:
            print(f"Item '{name}' not found in the cart.")

    def total_cost(self):
        return sum(self.cart.values())
# Example usage
cart = ShoppingCart()
cart.add_item("Laptop", 999.99)
cart.add_item("Headphones", 199.99)
print(f"Total cost: ${cart.total_cost():.2f}")
cart.remove_item("Headphones")
print(f"Total cost after removal: ${cart.total_cost():.2f}")
cart.remove_item("Smartphone")
```

OUTPUT:



```python
class ShoppingCart:
    def __init__(self):
        self.cart = {}

    def add_item(self, name, price):
        if name in self.cart:
            self.cart[name] += price
        else:
            self.cart[name] = price

    def remove_item(self, name):
        if name in self.cart:
            del self.cart[name]
        else:
            print(f"Item '{name}' not found in the cart.")

    def total_cost(self):
        return sum(self.cart.values())
# Example usage
cart = ShoppingCart()
cart.add_item("Laptop", 999.99)
```

```
PS C:\Users\SAIAKSHITH\OneDrive\Documents\AI-PROGRAMMING> & C:/Python314/python.exe "c:/Users/SAIAKSHITH/OneDrive/Documents/AI-PROGRAMMING/exp
8-3.py"
Enter your email address: saiakshithballe@gmail.com
Valid email address.
Enter the exam score: 98
Grade: A
Enter a sentence: sas
The sentence is a palindrome.
Total cost: $1199.98
Total cost after removal: $999.99
Item 'Smartphone' not found in the cart.
Converted date: 2024-12-25
PS C:\Users\SAIAKSHITH\OneDrive\Documents\AI-PROGRAMMING> 
```

Task 5: Date Format Conversion

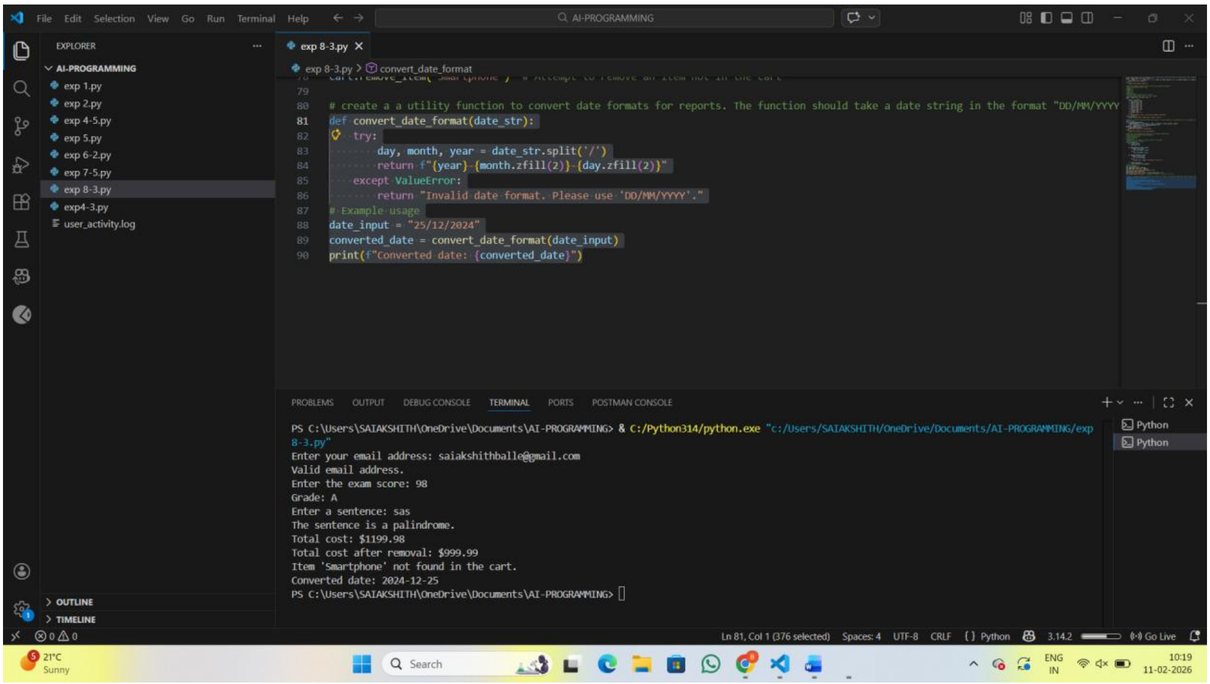
PROMT:

# create a a utility function to convert date formats for reports. The function should take a date string in the format "DD/MM/YYYY" and convert it to "YYYY-MM-DD".

CODE:

```python
def convert_date_format(date_str):
    try:
        day, month, year = date_str.split('/')
        return f"{year}-{month.zfill(2)}-{day.zfill(2)}"
    except ValueError:
        return "Invalid date format. Please use 'DD/MM/YYYY'."
# Example usage
date_input = "25/12/2024"
converted_date = convert_date_format(date_input)
print(f"Converted date: {converted_date}")
```

OUTPUT:



```
# create a a utility function to convert date formats for reports. The function should take a date string in the format "DD/MM/YYYY
def convert_date_format(date_str):
    try:
        day, month, year = date_str.split('/')
        return f"{year}-{month.zfill(2)}-{day.zfill(2)}"
    except ValueError:
        return "Invalid date format. Please use 'DD/MM/YYYY'."
# Example usage
date_input = "25/12/2024"
converted_date = convert_date_format(date_input)
print(f"Converted date: {converted_date}")
```

```
PS C:\Users\SAIAKSHITH\OneDrive\Documents\AI-PROGRAMMING> & C:/Python314/python.exe "c:/Users/SAIAKSHITH/OneDrive/Documents/AI-PROGRAMMING/exp 8-3.py"
Enter your email address: saiakshithballe@gmail.com
Valid email address.
Enter the exam score: 98
Grade: A
Enter a sentence: sas
The sentence is a palindrome.
Total cost: $1199.98
Total cost after removal: $999.99
Item 'Smartphone' not found in the cart.
Converted date: 2024-12-25
PS C:\Users\SAIAKSHITH\OneDrive\Documents\AI-PROGRAMMING> 
```

File Edit Selection View Go Run Terminal Help
AI-PROGRAMMING
EXPLORER
AI-PROGRAMMING
exp 1.py
exp 2.py
exp 4-5.py
exp 5.py
exp 6-2.py
exp 7-5.py
exp 8-3.py
exp4-3.py
user_activity.log
OUTLINE
TIMELINE
exp 8-3.py
exp 8-3.py > convert_date_format
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS POSTMAN CONSOLE
Python
Python
Ln 81, Col 1 (376 selected) Spaces: 4 UTF-8 CRLF {} Python 3.14.2 Go Live
21°C Sunny
Search
ENG IN
10:19 11-02-2026