SR UNIVERSITY

AI ASSIST CODING

LAB 6.4: AI-Based Code Completion – Classes, Loops, and Conditionals

NAME

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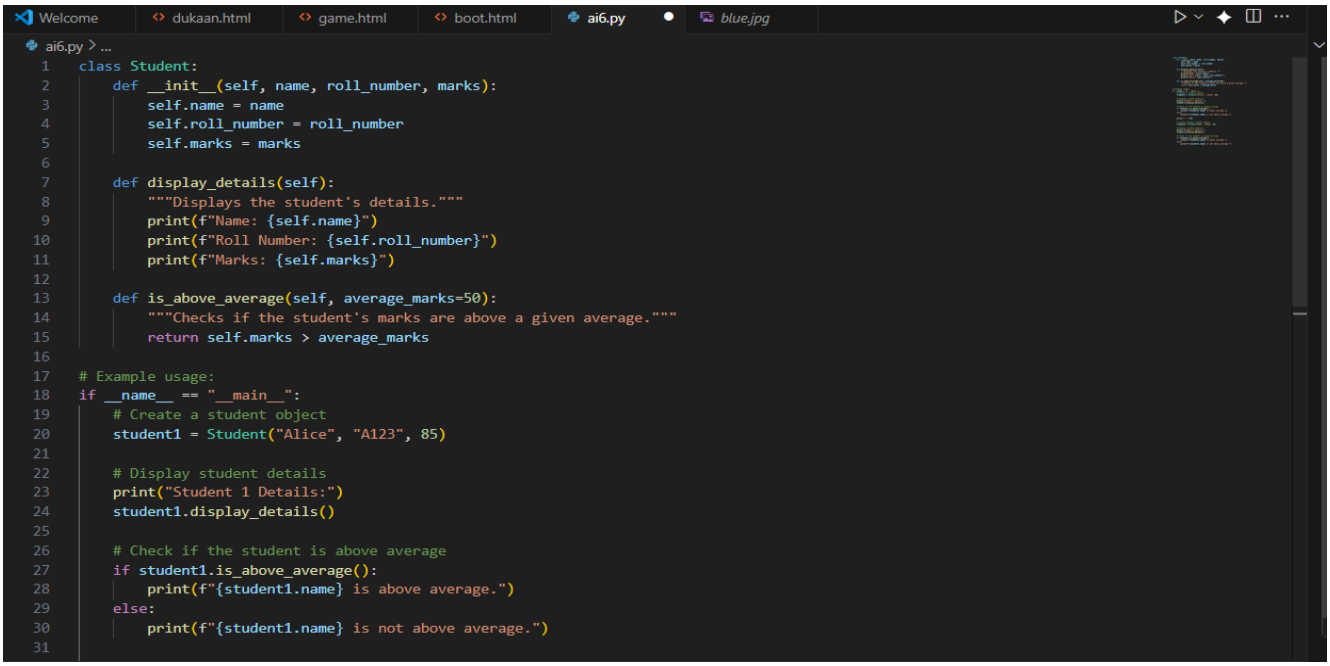
TASK #1:

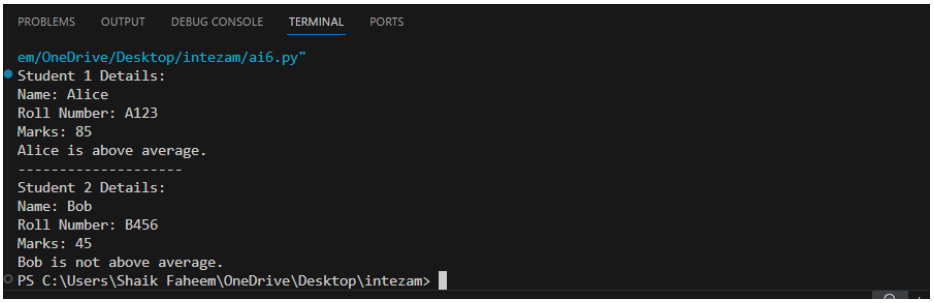
Prompt:

• Start a Python class named Student with attributes name, roll number, and marks, Prompt GitHub Copilot to complete methods for displaying details and checking if marks are above average.

Code Generated:



Output After executing Code:



Observations:

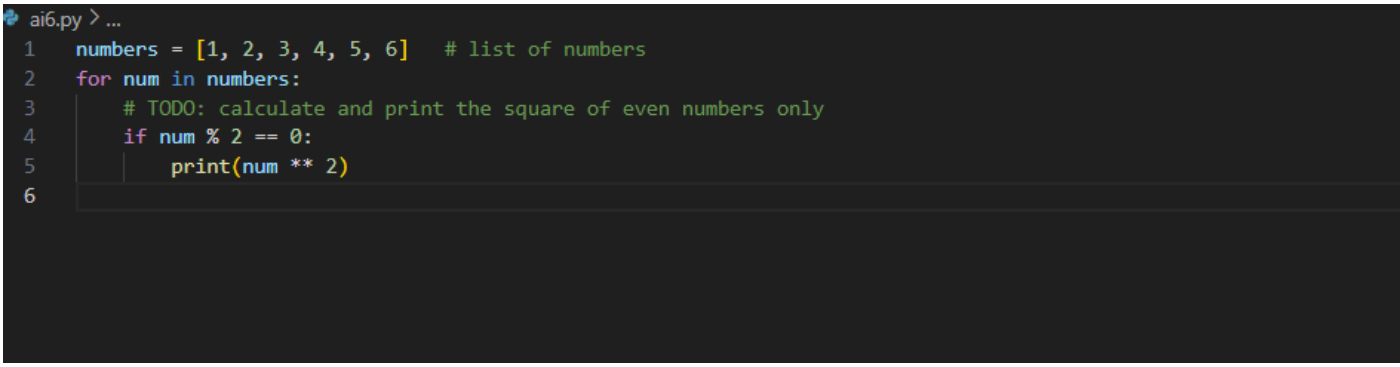
- The **Employee class** stores an employee's name, id, and monthly salary.
- It has a method to calculate the **yearly salary** (monthly × 12).

TASK #2:

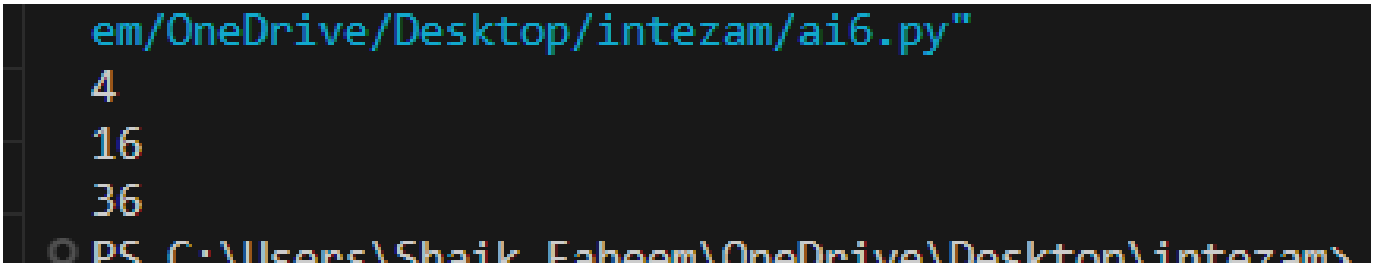
Prompt:

- Write the first two lines of a for loop to iterate through a list o f numbers. Use a comment prompt to let Copilot suggest how to calculate and print the square of even numbers only.

Code Generated:



Output After executing Code:



Observations:

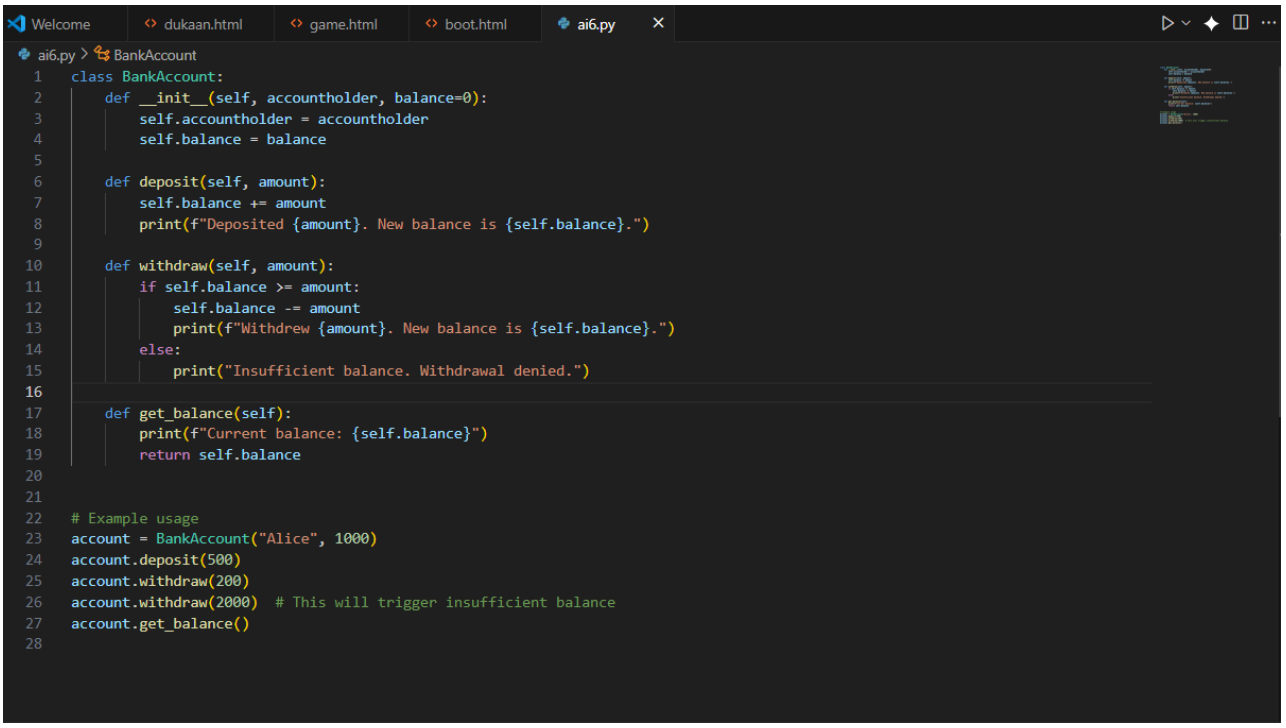
- The function Iterates through numbers.
- We have to give the Condition if num % 2 == 0 checks even numbers.
- It results in Prints their square using num ** 2.

TASK#3:

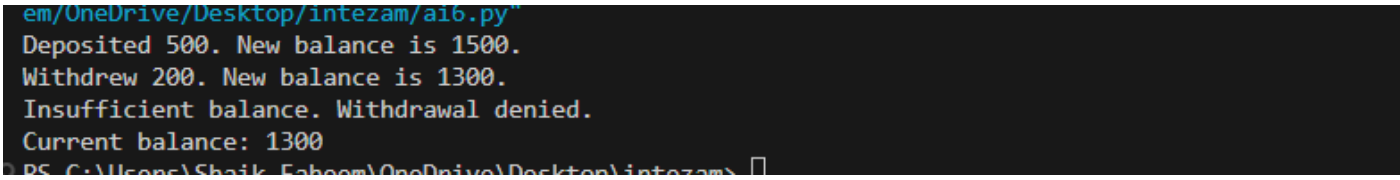
PROMPT:

•Create a class called Bank Account with attributes accountholder and balance .Use Copilot to complete methods for deposit() ,withdraw() ,and check for insufficient balance.

Code Generated:



Output After executing Code:



Observations:

- We used function deposit(): increases balance.
- we can able to use the function withdraw(): prevents overdrawing using if
- conditions . its results in check_balance(): shows current balance.

TASK#4:

PROMPT:

- Define a list of student dictionaries with keys name and score. Ask Copilot to write a while loop to print the names of students who scored more than 75.

Code Generated:

```python
students = [
    {"name": "Alice", "score": 82},
    {"name": "Bob", "score": 67},
    {"name": "Charlie", "score": 91},
    {"name": "David", "score": 72}
]

i = 0
while i < len(students):
    if students[i]["score"] > 75:
        print(students[i]["name"])
    i += 1
```

Output After executing Code:

```
PS C:\Users\Shaik Faheem\OneDrive\Desktop\intezam> & "C:
em/OneDrive/Desktop/intezam/ai6.py"
Alice
Charlie
```

Observations:

- We Uses while loop with counter i.
- The loop Checks if score > 75.
- It will Prints qualifying students.

TASK#5:

PROMPT:

- Begin writing a class Shopping Cart with an empty items list. Prompt Copilot to generate methods to add_item , remove_item , and use a loop to calculate the total bill using conditional discounts

.**Code Generated:**

```python
class ShoppingCart:
    def __init__(self):
        self.items = []  # Each item will be a dictionary: {"name": "Apple", "price": 50, "quantity": 2}

    def add_item(self, name, price, quantity=1):
        self.items.append({"name": name, "price": price, "quantity": quantity})
        print(f"Added {quantity} x {name} to the cart.")

    def remove_item(self, name):
        for item in self.items:
            if item["name"] == name:
                self.items.remove(item)
                print(f"Removed {name} from the cart.")
                return
        print(f"Item {name} not found in the cart.")

    def calculate_total(self):
        total = 0
        for item in self.items:
            total += item["price"] * item["quantity"]

        # Apply conditional discounts
        if total > 1000:
            discount = 0.1 * total   # 10% discount
            total -= discount
            print(f"10% discount applied: -{discount}")
        elif total > 500:
            discount = 0.05 * total  # 5% discount
            total -= discount
            print(f"5% discount applied: -{discount}")
```

Output After executing Code:

```
em/OneDrive/Desktop/intezam/ai6.py"
Added 1 x Laptop to the cart.
Added 2 x Mouse to the cart.
Removed Mouse from the cart.
Added 1 x Headphones to the cart.
10% discount applied: -110.0
Total bill: 990.0
```

Observations:

- If we want to add item use function-add_item(): adds item to cart.
- If we want to remove item use function remove_item(): removes by name
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