

# AI ASSISTED CODING

## ASSIGNMENT-10.1

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### TASK 1

#### GIVEN CODE-

```
Tabnine | Edit | Test | Explain | Document
def discount(price, category):
    if category == "student":
        if price > 1000:
            return price * 0.9
        else:
            return price * 0.95
    else:
        if price > 2000:
            return price * 0.85
        else:
            return price
```

#### PROMPT-

For the above code simplify and refactor for readability.

#### AI GENERATED CODE-

```
Tabnine | Edit | Test | Explain | Document
def discount(price, category):
    """
    Calculate discounted price based on category and original price.

    Parameters:
        price (float): Original price of the item
        category (str): Customer category ('student' or other)

    Returns:
        float: Discounted price
    """
    if category == "student":
        return price * 0.9 if price > 1000 else price * 0.95
    return price * 0.85 if price > 2000 else price

[36] ✓ 0.0s Python
```

## TASK 2

## GIVEN CODE-

```
Tabnine | Edit | Test | Explain | Document
def find_common(a, b):
    res = []
    for i in a:
        for j in b:
            if i == j:
                res.append(i)
    return res
```

## PROMPT-

Refactor and optimize the above code.

## AI GENERATED CODE-

```
Tabnine | Edit | Test | Explain | Document
def find_common(a, b):
    """
    Find common elements between two lists.

    Parameters:
        a (list): First list
        b (list): Second list

    Returns:
        list: List of common elements (no duplicates)
    """
    return list(set(a) & set(b))

✓ 0.0s Python
```

## TASK 3

## GIVEN CODE-

```
Tabnine | Edit | Test | Explain | Document
class Emp:
    def __init__(self, n, s):
        self.n = n
        self.s = s

    def inc(self, p):
        self.s = self.s + (self.s * p / 100)

    def pr(self):
        print("Emp:", self.n, "Salary:", self.s)
```

[20] ✓ 0.0s

## PROMPT-

For the above code improve Naming conventions, Encapsulation, Readability C maintainability.

```
class Employee:
    """
    Represents an employee with name and salary.

    Attributes:
        name (str): Employee's name.
    """
```

## TASK 4

### GIVEN CODE-

```
Tabnine | Edit | Test | Explain | Document
def process_scores(scores):
    total = 0
    for s in scores:
        total += s
    avg = total / len(scores)

    highest = scores[0]
    for s in scores:
        if s > highest:
            highest = s

    lowest = scores[0]
    for s in scores:
        if s < lowest:
            lowest = s

    print("Average:", avg)
    print("Highest:", highest)
    print("Lowest:", lowest)
```

### PROMPT-

Break the code into smaller helper functions.

## AI GENERATED CODE-

```
Tabnine | Edit | Test | Explain | Document
def calculate_average(scores):
    """Calculate and return the average of the scores."""
    return sum(scores) / len(scores)

Tabnine | Edit | Test | Explain | Document
def find_highest(scores):
    """Find and return the highest score."""
    highest = scores[0]
    for s in scores:
        if s > highest:
            highest = s
    return highest

Tabnine | Edit | Test | Explain | Document
def find_lowest(scores):
    """Find and return the lowest score."""
    lowest = scores[0]
    for s in scores:
        if s < lowest:
            lowest = s
    return lowest

Tabnine | Edit | Test | Explain | Document
def process_scores(scores):
    """
    Process a list of scores to print average, highest, and lowest values.
    """
```

## OUTPUT-

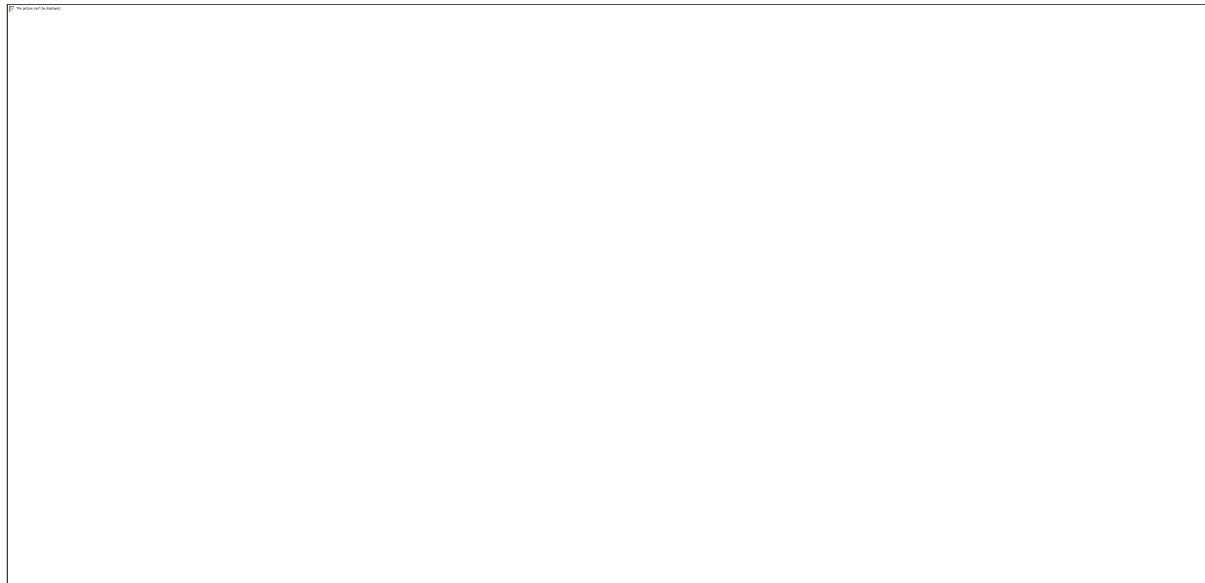
## TASK 5

## GIVEN CODE-

## PROMPT-

For the above code improve error handling, naming, and readability.

## AI GENERATED CODE-



## TASK 6

### GIVEN CODE-

```
Tabnine | Edit | Test | Explain | Document
def grade(score):
    if score >= 90:
        return "A"
    elif score >= 80:
        return "B"
    elif score >= 70:
        return "C"
    elif score >= 60:
        return "D"
    else:
        return "F"

print(grade(85))
```

[26] ✓ 0.0s Python

### PROMPT-

Simplify overly complex logic.

**AI GENERATED CODE-**

Tabnine | Edit | Test | Explain | Document

```
def grade(score):  
    """  
    Return the letter grade for a given numeric score.  
    """  
    grade_map = [(90, "A"), (80, "B"), (70, "C"), (60, "D")]  
  
    for threshold, letter in grade_map:  
        if score >= threshold:  
            return letter  
    return "F"  
  
# Example usage  
print(grade(85)) # Output: B  
print(grade(72)) # Output: C  
print(grade(58)) # Output: F
```

[27] ✓ 0.0s Python

...  
B  
C  
F