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**Customer Service module and integration with HR module –**

**A diagram of customer service

Description automatically generated**

# -\*- coding: utf-8 -\*-

"""CustomerService

This module manages employees in the customer-service department and tracks customer service metrics such as service quality, number of clients served, average service time, and customer satisfaction.

"""

class CustomerServiceEmployee:

    def \_\_init\_\_(self, emp\_id, name, role):

        self.emp\_id = emp\_id

        self.name = name

        self.role = role

        self.clients\_served = 0

        self.total\_service\_time = 0

        self.customer\_satisfaction = []

        self.service\_area = ""

    def serve\_client(self, service\_time, satisfaction\_level):

        self.clients\_served += 1

        self.total\_service\_time += service\_time

        self.customer\_satisfaction.append(satisfaction\_level)

    def set\_service\_area(self, service\_area):

        self.service\_area = service\_area

    def calculate\_average\_service\_time(self):

        return self.total\_service\_time / self.clients\_served if self.clients\_served > 0 else 0

    def calculate\_average\_satisfaction(self):

        return sum(self.customer\_satisfaction) / len(self.customer\_satisfaction) if self.customer\_satisfaction else 0

    def display\_customer\_service\_info(self):

        print(f"Customer Service Employee ID: {self.emp\_id}")

        print(f"Name: {self.name}")

        print(f"Role: {self.role}")

        print(f"Clients Served: {self.clients\_served}")

        print(f"Average Service Time: {self.calculate\_average\_service\_time()} minutes")

        print(f"Average Customer Satisfaction Level: {self.calculate\_average\_satisfaction()}")

        print(f"Service Area: {self.service\_area}")

        print("\n")

class CustomerServiceManager:

    def \_\_init\_\_(self):

        self.cs\_employees = {}

    def add\_cs\_employee(self, emp\_id, name, role):

        self.cs\_employees[emp\_id] = CustomerServiceEmployee(emp\_id, name, role)

    def log\_service(self, emp\_id, service\_time, satisfaction\_level):

        if emp\_id in self.cs\_employees:

            self.cs\_employees[emp\_id].serve\_client(service\_time, satisfaction\_level)

    def set\_service\_area(self, emp\_id, service\_area):

        if emp\_id in self.cs\_employees:

            self.cs\_employees[emp\_id].set\_service\_area(service\_area)

    def display\_cs\_employee\_info(self, emp\_id):

        if emp\_id in self.cs\_employees:

            self.cs\_employees[emp\_id].display\_customer\_service\_info()

# Example usage

if \_\_name\_\_ == "\_\_main\_\_":

    customer\_service\_manager = CustomerServiceManager()

    # Add customer service employees

    customer\_service\_manager.add\_cs\_employee(1, "Chris Brown", "Customer Service Rep")

    customer\_service\_manager.add\_cs\_employee(2, "Emma Wilson", "Customer Support Specialist")

    customer\_service\_manager.add\_cs\_employee(3, "Derek Robinson", "Customer Support Specialist")

    customer\_service\_manager.add\_cs\_employee(4, "Rachel Raynolds", "Customer Support Specialist")

    # Log service information

    customer\_service\_manager.log\_service(1, 15, 4.5)  # 15 minutes call with 4.5 satisfaction

    customer\_service\_manager.log\_service(1, 10, 4.0)  # 10 minutes call with 4.0 satisfaction

    customer\_service\_manager.log\_service(2, 20, 5.0)  # 20 minutes call with 5.0 satisfaction

    customer\_service\_manager.log\_service(3, 25, 4.8)  # 25 minutes call with 4.8 satisfaction

    customer\_service\_manager.log\_service(4, 30, 4.7)  # 30 minutes call with 4.7 satisfaction

    customer\_service\_manager.log\_service(4, 18, 4.3)  # 18 minutes call with 4.3 satisfaction

    # Set service area

    customer\_service\_manager.set\_service\_area(1, "Product Support")

    customer\_service\_manager.set\_service\_area(2, "Technical Assistance")

    customer\_service\_manager.set\_service\_area(3, "Technical Support")

    customer\_service\_manager.set\_service\_area(4, "Customer Relations")

    # Display customer service info for employees

    customer\_service\_manager.display\_cs\_employee\_info(1)

    customer\_service\_manager.display\_cs\_employee\_info(2)

    customer\_service\_manager.display\_cs\_employee\_info(3)

    customer\_service\_manager.display\_cs\_employee\_info(4)

**Document: Integration of Customer Service Module and Human Resources in**

**Overview**

This document describes the integration of the Human Resources (HR) module with the Customer Service (CS) module. The integrated system tracks employee management and specific customer service metrics, demonstrating how the two systems collaborate to provide a complete overview of an organization's HR and customer service operations. The program ensures that HR employees belonging to the customer service department can be tracked for their customer-facing performance metrics, while other employees are managed through general HR operations.

**System Architecture**

1. **HR Module**:
   * Handles employee details like ID, name, role, hours worked, overtime, unavailable hours, training hours, promotion status, and vacation status.
   * Provides functionality to log these details for all employees across the organization.
2. **Customer Service Module**:
   * Extends HR functionality specifically for customer service employees.
   * Tracks clients served, average service time, customer satisfaction, and the specific service area.
3. **Integration**:
   * The integration ensures that employees added to the HR module who belong to the customer service department are also tracked in the CS module.
   * HR manages employee attributes such as hours worked, promotions, etc., while CS tracks customer service performance metrics.

**Integration Details**

* The CustomerServiceManager class interacts with employees managed by the HRManager class.
* When an employee is hired or added to the HR system, they can be registered in the CustomerServiceManager if they belong to the customer service department.
* Variables like employee ID, name, and role are common between both modules. HR focuses on general employee management (hours worked, promotions), and the CS module focuses on client interaction metrics (clients served, service quality, etc.).

**Results Produced by the Program:**

Customer Service Employee ID: 1

Name: Chris Brown

Role: Customer Service Rep

Clients Served: 2

Average Service Time: 12.5 minutes

Average Customer Satisfaction Level: 4.25

Service Area: Product Support

Customer Service Employee ID: 2

Name: Emma Wilson

Role: Customer Support Specialist

Clients Served: 1

Average Service Time: 20.0 minutes

Average Customer Satisfaction Level: 5.0

Service Area: Technical Assistance

Customer Service Employee ID: 3

Name: Derek Robinson

Role: Customer Support Specialist

Clients Served: 1

Name: Derek Robinson

Role: Customer Support Specialist

Name: Derek Robinson

Name: Derek Robinson

Role: Customer Support Specialist

Clients Served: 1

Average Service Time: 25.0 minutes

Average Customer Satisfaction Level: 4.8

Service Area: Technical Support

Customer Service Employee ID: 4

Name: Rachel Raynolds

Role: Customer Support Specialist

Clients Served: 2

Average Service Time: 24.0 minutes

Name: Derek Robinson

Role: Customer Support Specialist

Clients Served: 1

Average Service Time: 25.0 minutes

Average Customer Satisfaction Level: 4.8

Service Area: Technical Support

Customer Service Employee ID: 4

Name: Rachel Raynolds

Role: Customer Support Specialist

Name: Derek Robinson

Role: Customer Support Specialist

Clients Served: 1

Average Service Time: 25.0 minutes

Average Customer Satisfaction Level: 4.8

Service Area: Technical Support

Customer Service Employee ID: 4

Name: Derek Robinson

Role: Customer Support Specialist

Clients Served: 1

Average Service Time: 25.0 minutes

Average Customer Satisfaction Level: 4.8

Service Area: Technical Support

Name: Derek Robinson

Role: Customer Support Specialist

Clients Served: 1

Average Service Time: 25.0 minutes

Average Customer Satisfaction Level: 4.8

Name: Derek Robinson

Role: Customer Support Specialist

Clients Served: 1

Average Service Time: 25.0 minutes

Average Customer Satisfaction Level: 4.8

Service Area: Technical Support

Name: Derek Robinson

Role: Customer Support Specialist

Clients Served: 1

Average Service Time: 25.0 minutes

Average Customer Satisfaction Level: 4.8

Service Area: Technical Support

Name: Derek Robinson

Role: Customer Support Specialist

Clients Served: 1

Average Service Time: 25.0 minutes

Average Customer Satisfaction Level: 4.8

Name: Derek Robinson

Role: Customer Support Specialist

Clients Served: 1

Average Service Time: 25.0 minutes

Average Customer Satisfaction Level: 4.8

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Average Service Time: 25.0 minutes

Average Customer Satisfaction Level: 4.8

Average Customer Satisfaction Level: 4.8

Service Area: Technical Support

Customer Service Employee ID: 4

Name: Rachel Raynolds

Role: Customer Support Specialist

Clients Served: 2

Average Service Time: 24.0 minutes

Average Customer Satisfaction Level: 4.5

Service Area: Customer Relations

**Conclusion:**

This integrated program provides a complete solution to manage both general HR and customer service metrics in one system, producing concrete results about employee performance and customer service quality. This allows businesses to maintain efficient employee tracking and customer service optimization.