

```
# Simulating the collection as a dictionary
```

```
collections = {}
```

```
# Function to create a collection (library)
```

```
def createLibrary(p_collection_name):
```

```
    collections[p_collection_name] = [] # Initialize an empty list for the collection
```

```
    print(f"Created collection '{p_collection_name}'...")
```

```
# Function to index data into a collection, excluding a specified column
```

```
def indexData(p_collection_name, p_exclude_column):
```

```
    # Simulated data (in a real scenario, this would be loaded from a database or file)
```

```
    employee_data = [
```

```
        {"EmpId": "E02001", "Name": "John", "Department": "HR", "Gender": "Male"},
```

```
        {"EmpId": "E02002", "Name": "Alice", "Department": "IT", "Gender": "Female"},
```

```
        {"EmpId": "E02003", "Name": "Bob", "Department": "Finance", "Gender": "Male"}]
```

```
    for emp in employee_data:
```

```
        # Create a shallow copy of the dictionary without the excluded column
```

```
        indexed_data = {k: v for k, v in emp.items() if k != p_exclude_column}
```

```
        collections[p_collection_name].append(indexed_data)
```

```
    print(f"Data indexed into collection '{p_collection_name}', excluding column '{p_exclude_column}'.")
```

```
# Function to search within a collection by column and value
```

```
def searchByColumn(p_collection_name, p_column_name, p_column_value):
```

```
    results = [emp for emp in collections[p_collection_name] if emp.get(p_column_name) == p_column_value]
```

```
    print(f"Search results for '{p_column_name}' = '{p_column_value}' in collection '{p_collection_name}':")
```

```
    for result in results:
```

```
        print(result)
```

```
# Function to get the employee count in a collection
```

```
def getEmpCount(p_collection_name):
```

```

count = len(collections[p_collection_name])

print(f"Employee count in collection '{p_collection_name}': {count}")

return count


# Function to delete an employee by ID
def delEmpById(p_collection_name, p_employee_id):
    collection = collections[p_collection_name]

    collections[p_collection_name] = [emp for emp in collection if emp.get('EmpId') != p_employee_id]

    print(f"Employee with ID '{p_employee_id}' deleted from collection '{p_collection_name}'.")


# Function to retrieve the count of employees grouped by department
def getDepFacet(p_collection_name):
    dep_facet = {}

    for emp in collections[p_collection_name]:
        department = emp.get('Department', 'Unknown') # 'Unknown' if Department key is missing
        dep_facet[department] = dep_facet.get(department, 0) + 1

    print(f"Department facet for collection '{p_collection_name}':")

    for department, count in dep_facet.items():
        print(f"{department}: {count}")


# -----
# Example Execution


# Define collection names
v_nameCollection = 'Hash_Anushiya'
v_phoneCollection = 'Hash_9768'


# Create the collections
createLibrary(v_nameCollection)
createLibrary(v_phoneCollection)


# Index data into the collections, excluding specified columns

```

```
indexData(v_nameCollection, 'Department')
```

```
indexData(v_phoneCollection, 'Gender')
```

```
# Get the employee count for the collections
```

```
getEmpCount(v_nameCollection)
```

```
# Delete an employee by ID
```

```
delEmpById(v_nameCollection, 'E02003')
```

```
# Get the updated employee count
```

```
getEmpCount(v_nameCollection)
```

```
# Search by column values
```

```
searchByColumn(v_nameCollection, 'Department', 'IT')
```

```
searchByColumn(v_nameCollection, 'Gender', 'Male')
```

```
searchByColumn(v_phoneCollection, 'Department', 'IT')
```

```
# Get department facets for the collections
```

```
getDepFacet(v_nameCollection)
```

```
getDepFacet(v_phoneCollection)
```