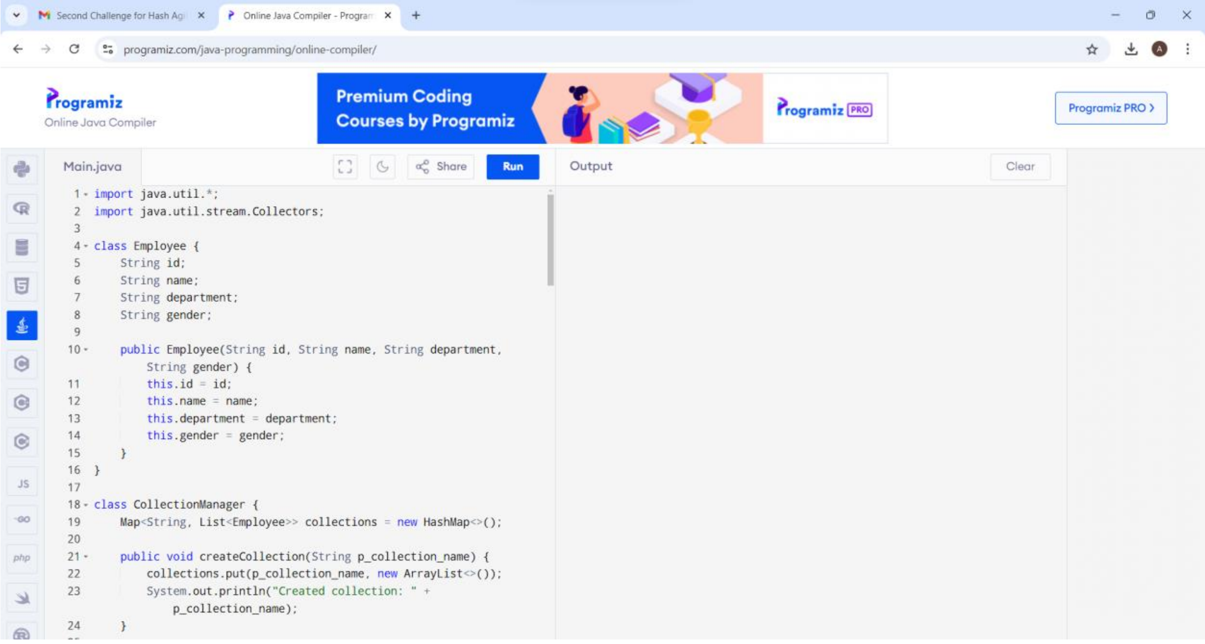
PROGRAM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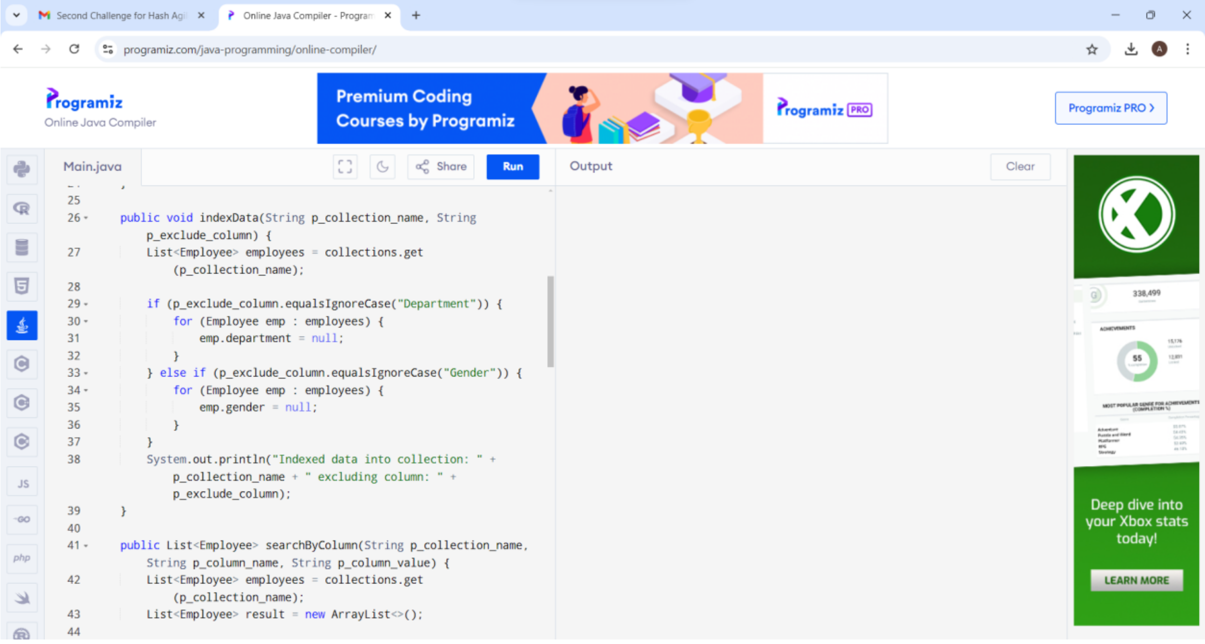
```java
import java.util.*;
import java.util.stream.Collectors;

class Employee {
    String id;
    String name;
    String department;
    String gender;

    public Employee(String id, String name, String department,
        String gender) {
        this.id = id;
        this.name = name;
        this.department = department;
        this.gender = gender;
    }
}

class CollectionManager {
    Map<String, List<Employee>> collections = new HashMap<>();

    public void createCollection(String p_collection_name) {
        collections.put(p_collection_name, new ArrayList<>());
        System.out.println("Created collection: " +
            p_collection_name);
    }
```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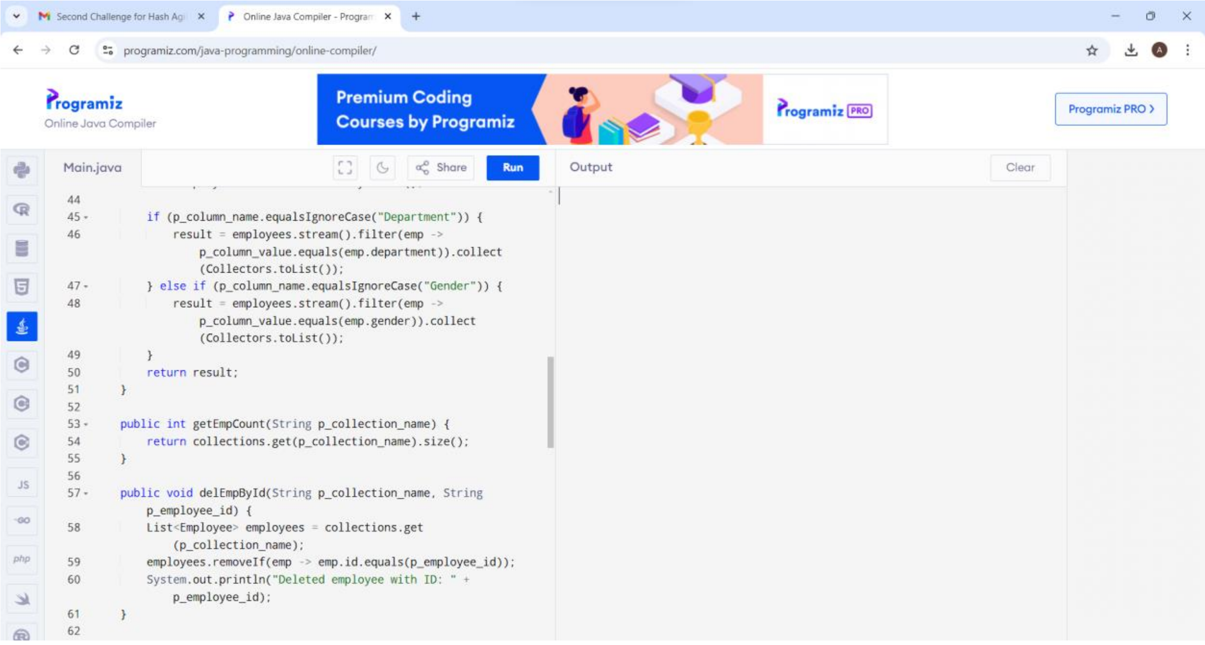
```java

    public void indexData(String p_collection_name, String
        p_exclude_column) {
        List<Employee> employees = collections.get
            (p_collection_name);

        if (p_exclude_column.equalsIgnoreCase("Department")) {
            for (Employee emp : employees) {
                emp.department = null;
            }
        } else if (p_exclude_column.equalsIgnoreCase("Gender")) {
            for (Employee emp : employees) {
                emp.gender = null;
            }
        }
        System.out.println("Indexed data into collection: " +
            p_collection_name + " excluding column: " +
            p_exclude_column);
    }

    public List<Employee> searchByColumn(String p_collection_name,
        String p_column_name, String p_column_value) {
        List<Employee> employees = collections.get
            (p_collection_name);
        List<Employee> result = new ArrayList<>();

```



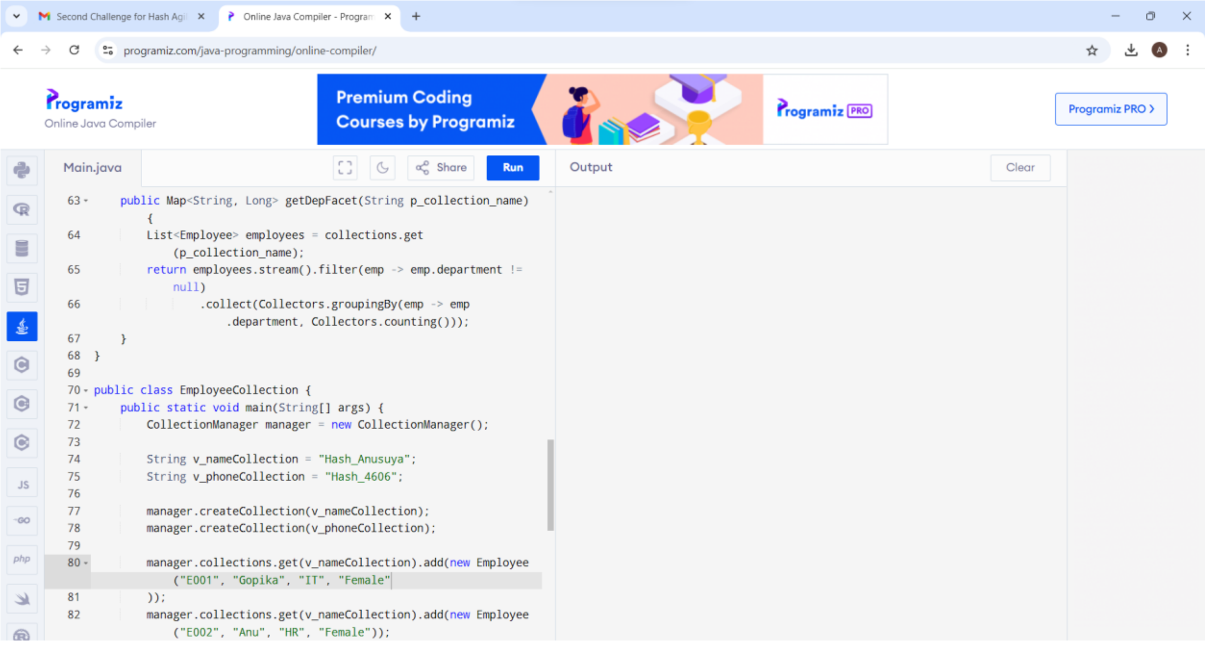
```java

        if (p_column_name.equalsIgnoreCase("Department")) {
            result = employees.stream().filter(emp ->
                p_column_value.equals(emp.department)).collect
                (Collectors.toList());
        } else if (p_column_name.equalsIgnoreCase("Gender")) {
            result = employees.stream().filter(emp ->
                p_column_value.equals(emp.gender)).collect
                (Collectors.toList());
        }
        return result;
    }

    public int getEmpCount(String p_collection_name) {
        return collections.get(p_collection_name).size();
    }

    public void delEmpById(String p_collection_name, String
        p_employee_id) {
        List<Employee> employees = collections.get
            (p_collection_name);
        employees.removeIf(emp -> emp.id.equals(p_employee_id));
        System.out.println("Deleted employee with ID: " +
            p_employee_id);
    }

```



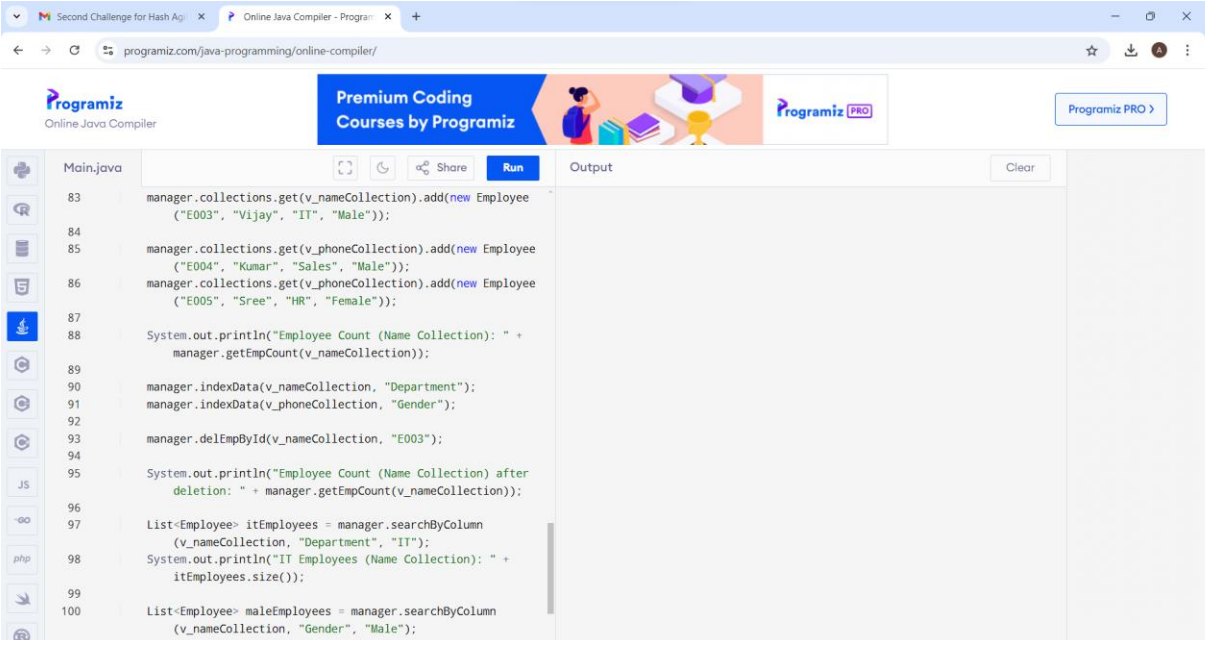
```java
    public Map<String, Long> getDepFacet(String p_collection_name)
        {
        List<Employee> employees = collections.get
            (p_collection_name);
        return employees.stream().filter(emp -> emp.department !=
            null)
                .collect(Collectors.groupingBy(emp -> emp
                    .department, Collectors.counting()));
    }
}

public class EmployeeCollection {
    public static void main(String[] args) {
        CollectionManager manager = new CollectionManager();

        String v_nameCollection = "Hash_Anusuya";
        String v_phoneCollection = "Hash_4606";

        manager.createCollection(v_nameCollection);
        manager.createCollection(v_phoneCollection);

        manager.collections.get(v_nameCollection).add(new Employee
            ("E001", "Gopika", "IT", "Female"
        ));
        manager.collections.get(v_nameCollection).add(new Employee
            ("E002", "Anu", "HR", "Female"));
```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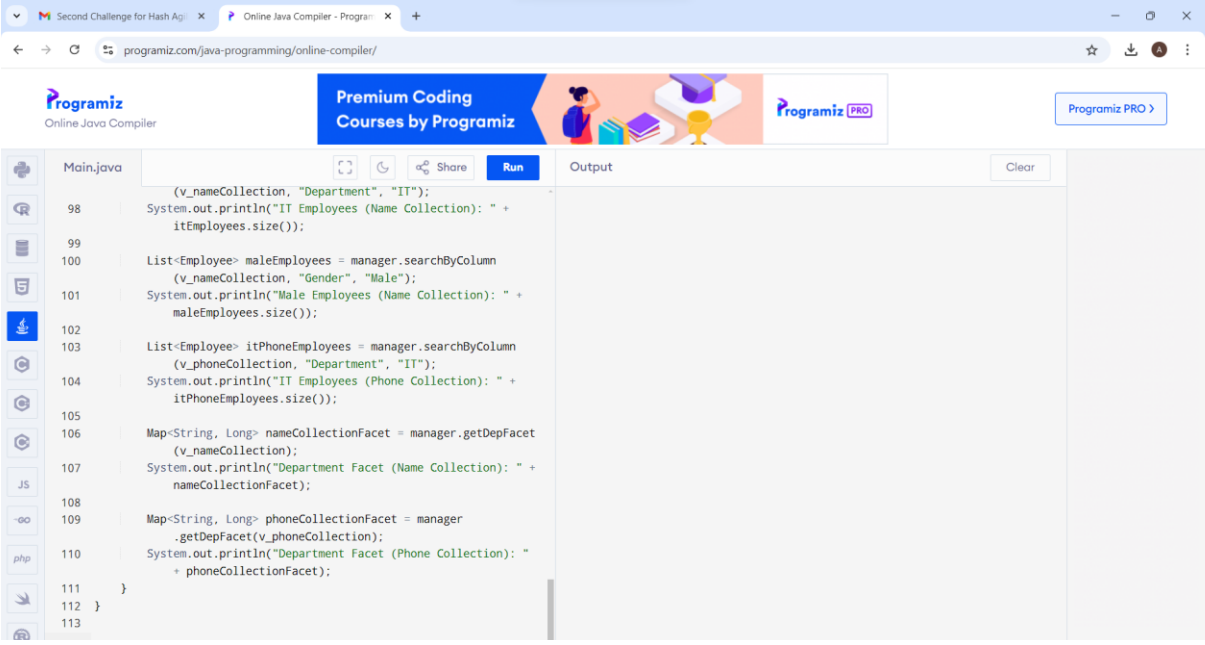
```
        manager.collections.get(v_nameCollection).add(new Employee
            ("E003", "Vijay", "IT", "Male"));

        manager.collections.get(v_phoneCollection).add(new Employee
            ("E004", "Kumar", "Sales", "Male"));
        manager.collections.get(v_phoneCollection).add(new Employee
            ("E005", "Sree", "HR", "Female"));

        System.out.println("Employee Count (Name Collection): " +
            manager.getEmpCount(v_nameCollection));

        manager.indexData(v_nameCollection, "Department");
        manager.indexData(v_phoneCollection, "Gender");

        manager.delEmpById(v_nameCollection, "E003");

        System.out.println("Employee Count (Name Collection) after
            deletion: " + manager.getEmpCount(v_nameCollection));

        List<Employee> itEmployees = manager.searchByColumn
            (v_nameCollection, "Department", "IT");
        System.out.println("IT Employees (Name Collection): " +
            itEmployees.size());

        List<Employee> maleEmployees = manager.searchByColumn
            (v_nameCollection, "Gender", "Male");
```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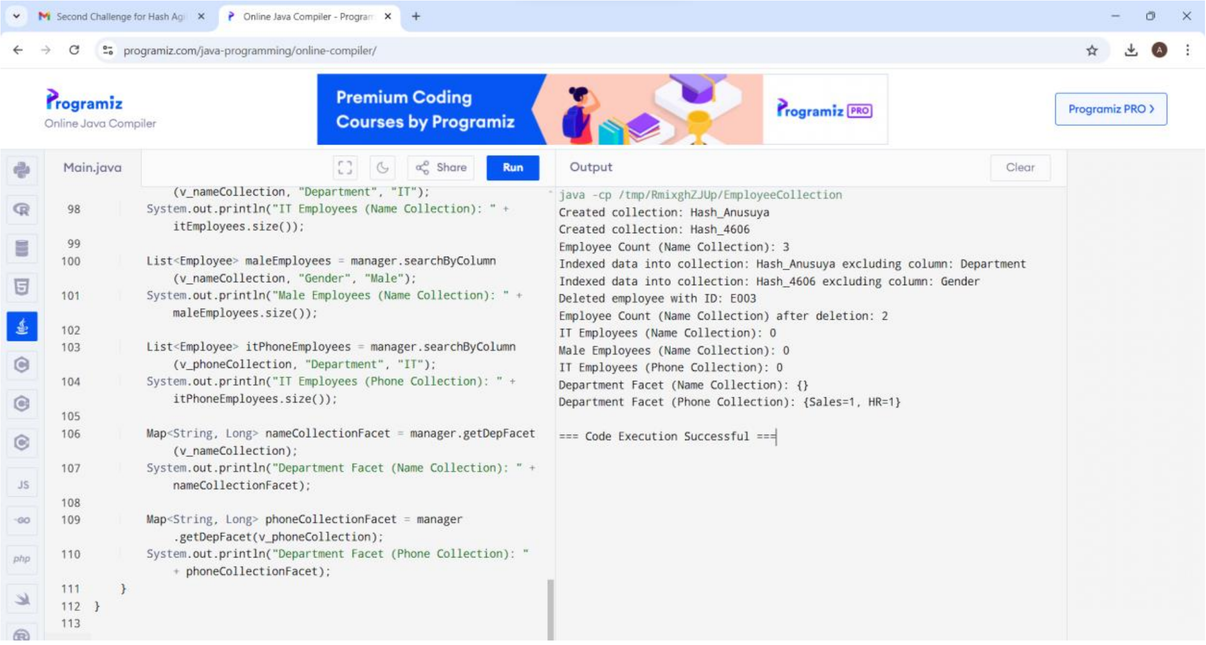
```
            (v_nameCollection, "Department", "IT");
        System.out.println("IT Employees (Name Collection): " +
            itEmployees.size());

        List<Employee> maleEmployees = manager.searchByColumn
            (v_nameCollection, "Gender", "Male");
        System.out.println("Male Employees (Name Collection): " +
            maleEmployees.size());

        List<Employee> itPhoneEmployees = manager.searchByColumn
            (v_phoneCollection, "Department", "IT");
        System.out.println("IT Employees (Phone Collection): " +
            itPhoneEmployees.size());

        Map<String, Long> nameCollectionFacet = manager.getDepFacet
            (v_nameCollection);
        System.out.println("Department Facet (Name Collection): " +
            nameCollectionFacet);

        Map<String, Long> phoneCollectionFacet = manager
            .getDepFacet(v_phoneCollection);
        System.out.println("Department Facet (Phone Collection): "
            + phoneCollectionFacet);

    }
}
```

OUTPUT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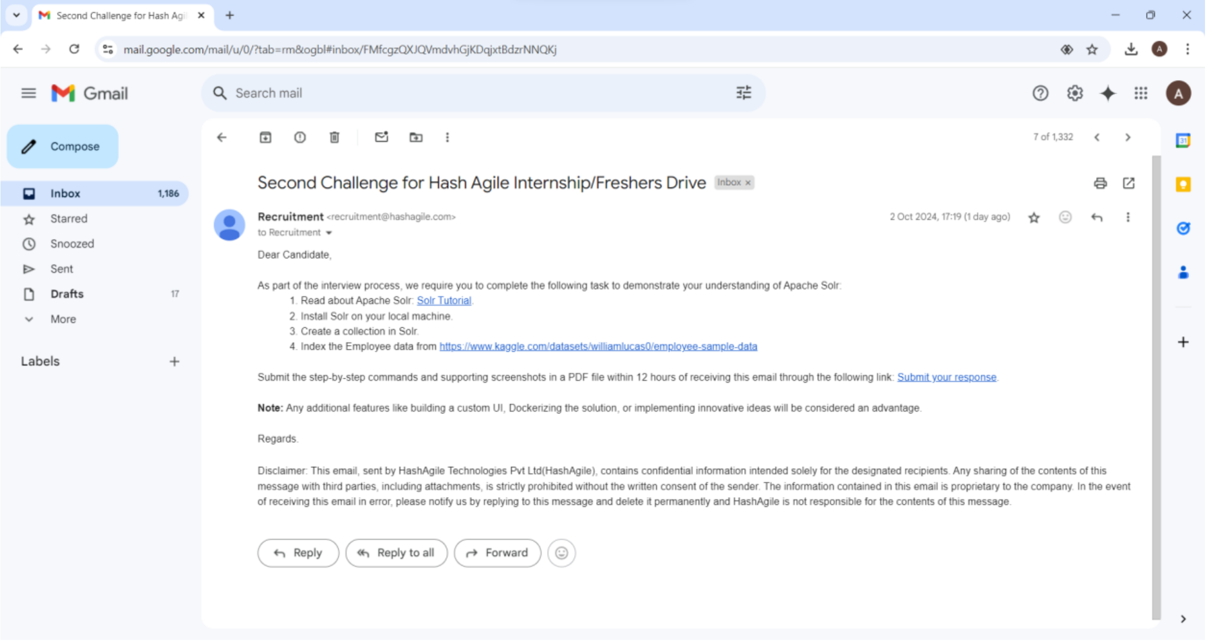
```
        (v_nameCollection, "Department", "IT");
    System.out.println("IT Employees (Name Collection): " +
        itEmployees.size());

    List<Employee> maleEmployees = manager.searchByColumn
        (v_nameCollection, "Gender", "Male");
    System.out.println("Male Employees (Name Collection): " +
        maleEmployees.size());

    List<Employee> itPhoneEmployees = manager.searchByColumn
        (v_phoneCollection, "Department", "IT");
    System.out.println("IT Employees (Phone Collection): " +
        itPhoneEmployees.size());

    Map<String, Long> nameCollectionFacet = manager.getDepFacet
        (v_nameCollection);
    System.out.println("Department Facet (Name Collection): " +
        nameCollectionFacet);

    Map<String, Long> phoneCollectionFacet = manager
        .getDepFacet(v_phoneCollection);
    System.out.println("Department Facet (Phone Collection): "
        + phoneCollectionFacet);
  }
}
```

```
java -cp /tmp/RmixghZJUp/EmployeeCollection
Created collection: Hash_Anusuya
Created collection: Hash_4606
Employee Count (Name Collection): 3
Indexed data into collection: Hash_Anusuya excluding column: Department
Indexed data into collection: Hash_4606 excluding column: Gender
Deleted employee with ID: E003
Employee Count (Name Collection) after deletion: 2
IT Employees (Name Collection): 0
Male Employees (Name Collection): 0
IT Employees (Phone Collection): 0
Department Facet (Name Collection): {}
Department Facet (Phone Collection): {Sales=1, HR=1}

=== Code Execution Successful ===
```

MAIL



Second Challenge for Hash Agile Internship/Freshers Drive

Recruitment <recruitment@hashagile.com>
to Recruitment

2 Oct 2024, 17:19 (1 day ago)

Dear Candidate,

As part of the interview process, we require you to complete the following task to demonstrate your understanding of Apache Solr:

1. Read about Apache Solr: Solr Tutorial.
2. Install Solr on your local machine.
3. Create a collection in Solr.
4. Index the Employee data from https://www.kaggle.com/datasets/williamlucas0/employee-sample-data

Submit the step-by-step commands and supporting screenshots in a PDF file within 12 hours of receiving this email through the following link: Submit your response.

Note: Any additional features like building a custom UI, Dockerizing the solution, or implementing innovative ideas will be considered an advantage.

Regards.

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