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CODE-

```
import java.util.*;  
  
public class PrecisionRecallCalculator {  
  
    public static void main(String[] args) {  
        // Sample input: Retrieved documents (Answer Set A)  
        Set<String> retrievedDocs = new HashSet<>(Arrays.asList("D1", "D2", "D3", "D4"));  
  
        // Relevant documents for query q1 (Rq1)  
        Set<String> relevantDocs = new HashSet<>(Arrays.asList("D2", "D3", "D5", "D6"));  
  
        // Calculate precision and recall  
        double precision = calculatePrecision(retrievedDocs, relevantDocs);  
        double recall = calculateRecall(retrievedDocs, relevantDocs);  
  
        // Print results  
        System.out.printf("Precision: %.2f\n", precision);  
        System.out.printf("Recall: %.2f\n", recall);  
    }  
  
    public static double calculatePrecision(Set<String> retrieved, Set<String> relevant) {  
        Set<String> intersection = new HashSet<>(retrieved);  
        intersection.retainAll(relevant); // A ∩ R  
        if (retrieved.isEmpty()) return 0.0;  
        return (double) intersection.size() / retrieved.size();  
    }  
  
    public static double calculateRecall(Set<String> retrieved, Set<String> relevant) {
```

```

        Set<String> intersection = new HashSet<>(retrieved);

        intersection.retainAll(relevant); // A ∩ R

        if (relevant.isEmpty()) return 0.0;

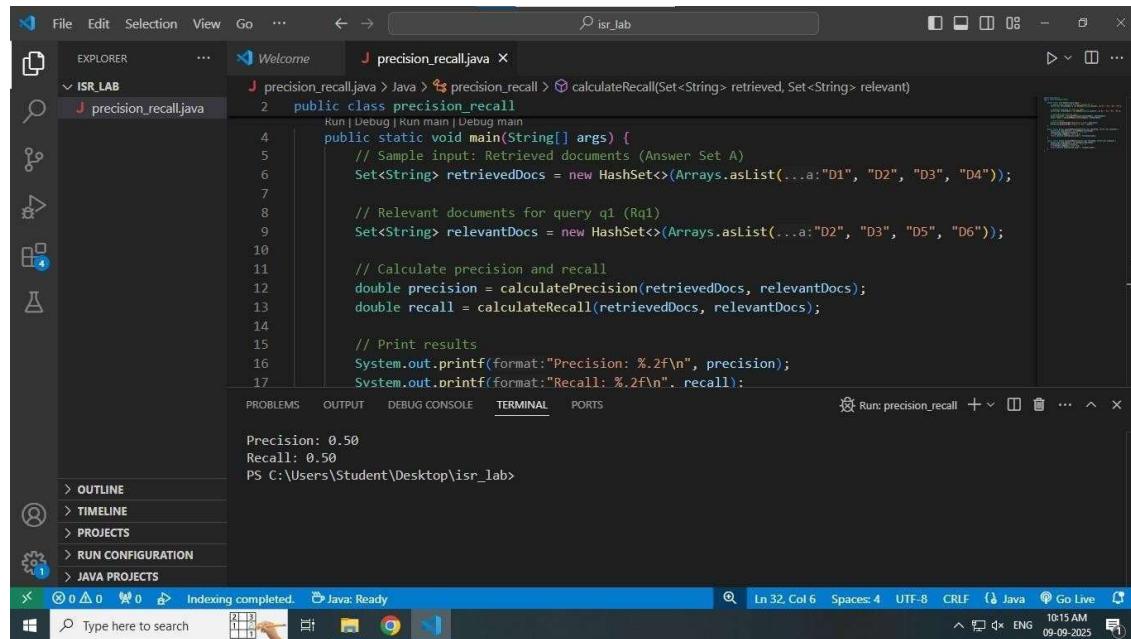
        return (double) intersection.size() / relevant.size();

    }

}

```

OUTPUT:-



```

File Edit Selection View Go ... ← → 🔍 isr_lab
EXPLORER ISR LAB precision_recall.java
precision_recall.java > Java > precision_recall > calculateRecall(Set<String> retrieved, Set<String> relevant)
2 public class precision_recall
3     Run | Debug | Run main | Debug main
4     public static void main(String[] args) {
5         // Sample input: Retrieved documents (Answer Set A)
6         Set<String> retrievedDocs = new HashSet<>(Arrays.asList(...a:"D1", "D2", "D3", "D4"));
7
8         // Relevant documents for query q1 (Rq1)
9         Set<String> relevantDocs = new HashSet<>(Arrays.asList(...a:"D2", "D3", "D5", "D6"));
10
11         // Calculate precision and recall
12         double precision = calculatePrecision(retrievedDocs, relevantDocs);
13         double recall = calculateRecall(retrievedDocs, relevantDocs);
14
15         // Print results
16         System.out.printf("Precision: %.2f\n", precision);
17         System.out.printf("Recall: %.2f\n", recall);
}

```

Precision: 0.50
Recall: 0.50
PS C:\Users\Student\Desktop\isr_lab>