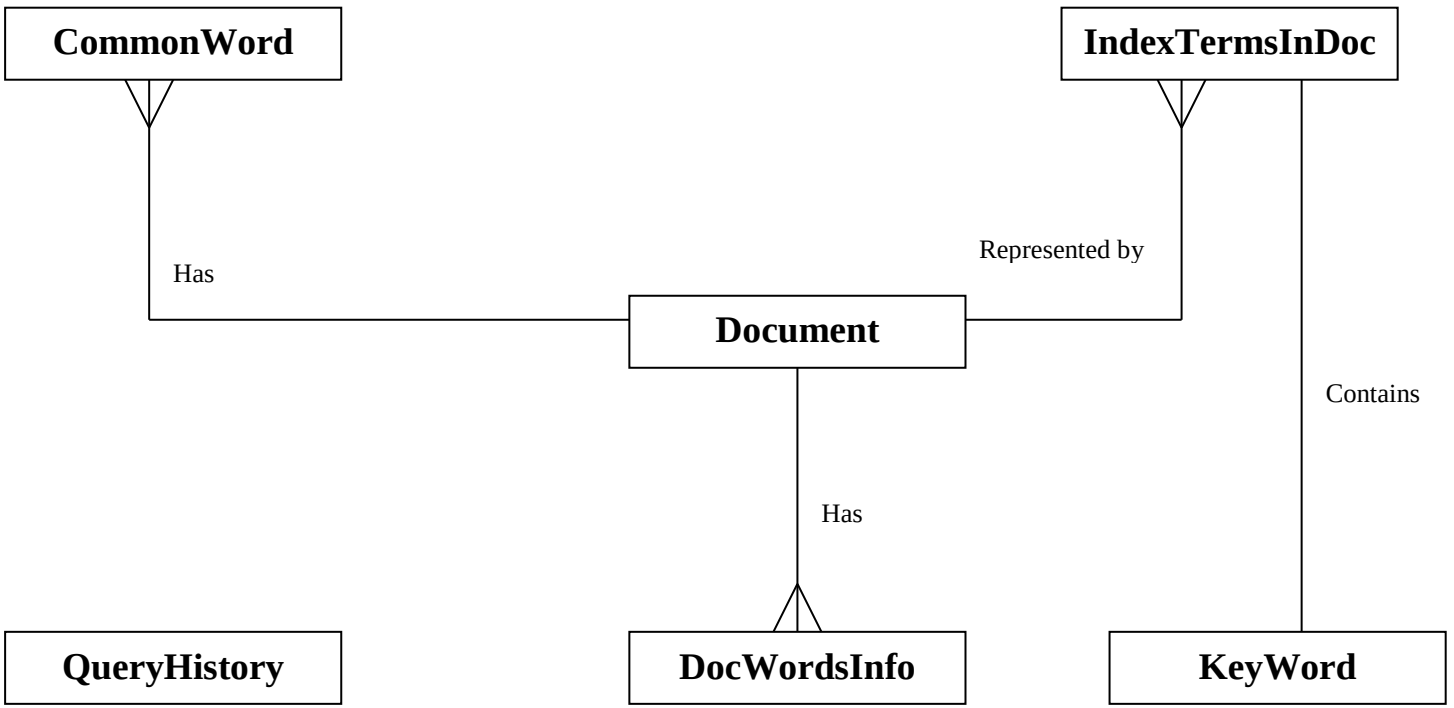

Entity Relationship Diagram for The IR system

Table Name: KeyWord

Field Name	Field Type
TermValue	String
GlobalWeight	Float
TermNumber	Auto Number

Table Name: Document

Field Name	Field Type
DocID	String
DocNumber	Auto Number
IGNORED	Boolean
Type	String
Location	String

Table Name: CommonWord

Field Name	Field Type
TermValue	String

Table Name: IndexTermsInDoc

Field Name	Field Type
DocNumber	Integer
TermNumber	Integer
Weight	Float

Table Name: QueryHistory

Field Name	Field Type
QueryNumber	Auto Number
QueryValue	String
QueryDate	Date

Table Name: DocWordsInfo

Field Name	Field Type
DocNumber	Integer
WordNumber	Integer
Frequency	Integer

Other Flat Files used for Avoiding Overload because the services provided by DBMS not needed in this situation.

Flat Files :

Ak.txt :

Which stores the Ak matrix that produced from the multiplication of U, V and S after the reduction of the orginal A matrix Dimensions.

V.txt :

Which stores the V matrix (the right singular matrix) that produced from the Singular Value Decomposition on the Original A matrix.

U.txt :

Which stores the U matrix (the left singular matrix) that produced from the Singular Value Decomposition on the Original A matrix.

S.txt :

Which stores the S matrix (the singular values matrix) that produced from the Singular Value Decomposition on the Original A matrix.

QueryLog+QueryNumber.txt :

Which stores the file list and term list resulted from that query.

Data Structure will be used in storing and retrieving the Ak, V, U, S files :

```
U_V_S_struct =
        {
                Row : integer
                Column : integer
                Value : Float
        }
```

But, the difference between the previously mentioned files is the way of storing and retrieving the data where in the U.txt file Columns of the matrix will be written first, in the contrary in the V.txt file Rows of the matrix will be written first.

Other Data Structure Needed and will be used in Class Collaboration and interaction :

```
WordCount_struct =
        {
                WordValue : String
                Frequency : integer
        }
WordWeight_struct =
        {
                WordValue : String
                Weight : Float
                Representative : Boolean
        }
```