



References

1. Yasawardane A., නීතිය නොදැනීම සමාවට කරුණක් නොවේ. (Ignoranta Juris Haud Excusat) , 2011, Saranga Publication , ISBN 978-955-684-005-6, pp, 55-70.
2. Cohen M.L, Olso K.C., “Legal Research - in a nut shell”, 2003, ISBN-13: 978-0314147073, pp. 65-78.
3. LAW – DATABASES, Queen Mary, University of London
<http://www.library.qmul.ac.uk/subject/law/databases>, Accessed on 2014-05-06.
4. Westlaw: quick user guide, London metropolitan university, Library Services,
<https://metranet.londonmet.ac.uk/fms/MRSite/psd/ls/subjectGuides/law/Quick%20guide%20to%20using%20Westlaw.pdf>, Accessed on 2014-05-06.
5. HeinOnline, Law Journal Library,
 <http://heinonline.org/HeinDocs/LawJournalLibrary.pdf>, Accessed on 2014-05-06.
www.lib.mrt.ac.lk
6. Ding, Y., Foo, S., Ontology Research and Development, Part I – A Review of Ontology Generation, Journal of Information Science, 2002, 28(2), 123-136.
7. Coray, L.J.M., “An Introduction to the Legal System of Sri Lanka”, 2003, ISBN 995-8733-18-0, pp. 150-158.
8. "HeinOnline's Getting Started Webinar",
<https://www.youtube.com/watch?v=VGq7ZsZlsMc>, Marcie Baranich, HeinOnline Support 2009-04-15, Accessed on 2014-05-19.
9. Balasingham, K., Laws of Ceylon, 1929, Sweet and Maxwell, London. Chapter 15 & 17.
10. Subhashini, R., Akilandeswari, J., A Survey on Ontology Construction Methodologies, Volume 1 www.ijecbs.com, Vol 1, Issue 1, January 2011.
11. 1978 Sri Lanka Constitution including 19th amendment, Government Press, 2015.

12. Swartout, B., Patil, R., Knight, K., 1996, "Towards Distributed Use of Large-Scale Ontologies", AAI Technical Report, SS-97-06.
13. Ismail, M.A., Yaacob, M., Kareem, S.A., "Ontology Construction: An overview, Malaysia", 2006.
14. Ding Y., Foo S., 2001, "Ontology research and development. Part 1 – Review of ontology generation", Journal of Information Science, pp. 123-136.
15. Mihalcea, R.L iu H., Lieberman, H., 2006. "NLP (Natural Language Processing) for NLP (Natural Language Programming)", In Proceedings of 7th international conference on Computational Linguistics and Intelligent Text Processing, pp: 319-330.
16. Ismail, Z., The Muslim Law of Sri Lanka, <http://www.scribd.com/doc/27552670/The-Muslim-Law-of-Sri-Lanka>, Accessed on 2014-09-06.
17. Rzevski, G., Skobelev, P., "Emergent Intelligence in Large Scale Multi-Agent Systems", International Journal of Computers, Issue 4, Volume 1, 2007.
18. Furbach, U., Schoon, C., Stolzenberg, F., "Cognitive Systems and Question Answering", Computer Systems, Artificial Intelligence, 18 November 2014.
19. Gruber, T.R., 1993, "A Translation approach to portable ontology specifications", Knowledge Acquisition 5 (2), 199-220
20. Noy, N.F., McGuinness, D.L., "Ontology Development 101: A Guide to Creating Your First Ontology", Stanford University, Stanford, CA, 94305.
21. Full-Text Search (SQL Server), SQL Server 2014, MSDN, <http://msdn.microsoft.com/en-us/library/ms142571.aspx>, Accessed on 2014-12-04.
22. Query with Full-Text Search, MSDN, <https://msdn.microsoft.com/en-us/library/ms142583.aspx>, Accessed on 2014-12-04.
23. General Architecture for Text Engineering, GATE, Access 2014-12-10.

24. Gruber, T. R., "A Translation Approach to Portable Ontology Specifications. Knowledge Acquisition", 5(2):199–220.
25. Constitute Project, <https://www.constituteproject.org/>, Accessed 2014-12-30.
26. Jayakar, T., Sri Lankan Constitutes, From Solsberry to 1978 18th Amendment, 2011 January.
27. Lee, S., Ryun, P., Choi, K., "Ontology-based Question Answering System", Korea Advanced Institute of Science and Technology.
28. Kawtrakul, A., Thunkijjanukij, A., Khantonthong, N., "Rich Lexical Knowledge based Q&A System for Ubiquitous Knowledge Service".
29. Palaniappan, L., Rao, N.S., "An Ontology-based Question Answering Method with the use of Query Template", International Journal of Computer Applications (0975 – 8887), Volume 9– No.9, November 2010.
30. Yu, J., Li, D., Hou, J., "Similarity Measure of Test Question Based on Ontology and VSM", The Open Automation and Control Systems Journal 2014, 6, pp 262-267, University of Moratuwa, Sri Lanka. Electronic Theses & Dissertations www.lib.mrt.ac.lk
31. Galton S., Buckley, C., "Term-weighting approaches in automation text retrieval", Information Processing and Management, vol. 24, no. 5, pp. 513-523, 1988.
32. Asanka, P.P.G.D, "Finding Similar Text Files using Text Mining", 8th IEEE ICCSE 2013 Colombo.
33. Russel M.A, Whiz-Bang, A., "Introduction to TF-IDF" in Mining the Social Web, New Delhi, O'Reilly Media, Inc., 2011, p. 201.
34. Hand, D., Mannila, H., Smyth, P., "Retrival by Content," in Principles of Data Mining, New Delhi, Prentice Hall of India Private Limited, 2007, p. 456–464.
35. Hair, J.F., Black, W.C., Babin, B.J., "in Multivariate Data Analysis", New Delhi, Pearson Education in South Asia, 2012, p. 599.
36. Han, J., Pattern Discovery in Data Mining, University of Illinois at Urbana-Champaign, Course Period 2015-Feb-09 – 2015-Mar-08.

37. SOUNDEX (Transact-SQL), MSDN, <https://msdn.microsoft.com/en-us/library/ms187384.aspx?f=255&MSPPError=-2147217396>, Accessed on 2015-02-20.
38. "The Soundex Indexing System". National Archives and Records Administration. 2007-05-30. Accessed 2015-02-24.
39. Busse, J., Humm, B., Lubbert, C., Actually, What Does "Ontology" Mean? A Term Coined by Philosophy in the Light of Different Scientific Disciplines, Journal of Computing and Information Technology - CIT 23, 2015, 1, pp. 29–41.
40. Gruber, T.R., A translation approach to portable ontologies. Knowledge Acquisition, 5(2), 1993, pp. 199–220,
41. Uschold, M., Gruninger, M., Ontologies: Principles, Methods and Applications. Knowledge Engineering Review, 11(2), June 1996.
42. Herre H., General Formal Ontology (GFO):A Foundational Ontology Integrating Objects and Processes. Technical Report, 8, University of Leipzig, 2006
43. Pickert, U., Einführung in Ontologien, [http://www.dbis.informatik.hu-berlin.de/dbisold/lehre/WS0203/SemWeb/artikel/2/Pickert](http://www.dbis.informatik.hu-berlin.de/dbisold/lehre/WS0203/SemWeb/artikel/2/Pickert%20Ontologien%20final.pdf) Ontologien final.pdf, Accessed on 2014-10-12.
44. "Sri Lanka's Presidential Poll Due This Year: Court", Arab News, <http://www.arabnews.com/node/272102>, 2005-08-25, Accessed 2015-01-12.
45. Heymans, S., Ma, L., Anicic, D., Ontology Reasoning With Large Data Repositories, IBM China Research Lab,
46. Zhou, J., Ma, L., Liu, Q., Zhang, L., Yu, Y., 2006, Minerva: A Scalable OWL Ontology Storage and Inference System. In Proceedings of the 1st Asian Semantic Web Conference, volume 4185 of Lecture Notes in Computer Science, pages 429-443, Springer.

47. Martinez-Cruz, C., Ignacio, J. Blanco, M. Amparo Vila, Ontologies versus relational databases: are they so different? A comparison, Springer Science+Business Media B.V., 2011.
48. Zachary Elkinsa, James Meltonb, Tom Ginsburgc, Constitute: The World's Constitutions to Read, Search, and Compare, Journal of Web Semantics, 2013.
49. Fernández López, M., Overview Of Methodologies For Building Ontologies, IJCAI-99 workshop on Ontologies and Problem-Solving Methods (KRR5) Stockholm, Sweden, August 2, 1999.
50. Law Lanka, A-Z guide to Laws of Sri Lanka and Reported Cases, <http://www.lawlanka.com/>, Accessed on 2015-03-12.
51. Ranasinghe, R., Perera, S., Gammanpila, U.P., De Silva, H., Wada Pitiya, Derana Television, Producer Sanka Amarajith De Silva, 2015-06-17 10:30PM – 12:00 AM.
52. Zhai, C.X., Week 1: NLP, Text Representation, and Word Association Mining, Text Mining and Analytics, Department of Computer Science, University of Illinois at Urbana-Champaign., www.coursera.org.

www.lib.mrt.ac.lk
53. Poole D., Soundex - Experiments with SQL CLR, SQLServerCentral.com, <http://www.sqlservercentral.com/articles/Programming/101836/>, 2013/09/12, Accessed on 2015/06/12.
54. Poole, D., Soundex - Experiments with SQLCLR Part 2, SQLServerCentral.com, <http://www.sqlservercentral.com/articles/soundex/120628/>, 2014/12/30, Accessed on 2015/06/12.

Script to Retrieve Simple Search

```
SELECT C.ChapterNumber
      ,C.ChapterName
      ,D.Subsection_ID
      ,D.Subsection
      ,D.Details
FROM [dbo].[Constitute_Details] D
INNER JOIN [dbo].[Constitute_Chapters] C ON D.ChapterID = C.ChapterNumber
WHERE CONTAINS (Details, 'religion')
GO
```

```
SELECT C.ChapterNumber
      ,C.ChapterName
      ,D.Subsection_ID
      ,D.Subsection
      ,D.Details
FROM [dbo].[Constitute_Details] D
INNER JOIN [dbo].[Constitute_Chapters] C ON D.ChapterID = C.ChapterNumber
WHERE CONTAINS (Details, 'religion AND caste')
GO
```

```
SELECT C.ChapterNumber
      ,C.ChapterName
      ,D1.Subsection_ID
      ,D1.Subsection
      ,D1.Details
FROM [dbo].[Constitute_Details] D1
INNER JOIN [dbo].[Constitute_Chapters] C ON D1.ChapterID = C.ChapterNumber
WHERE FREETEXT (Details, 'religion')
GO
```

```
SELECT KL.RANK
      ,FL.Subsection
      ,FL.Subsection
      ,FL.Details
FROM [dbo].[Constitute_Details] AS FL
INNER JOIN
  FREETEXTTABLE([dbo].[Constitute_Details] , Details,
                'religion') AS KL
  ON FT_TBL.Subsection_ID = KL.[KEY]
ORDER BY KL.RANK DESC
GO
```

```
SELECT *
```

```
FROM Constitute_Details AS FT_TBL INNER JOIN  
  FREETEXTTABLE (Constitute_Details,  
    Details,  
    '(language NEAR religion)'  
  
  ) AS KL  
  ON FT_TBL.Subsection_ID = KL.[KEY]  
WHERE KL.RANK > 2  
ORDER BY KL.RANK DESC;  
GO
```



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Appendix B

Code to Get Question Type

```
CREATE FUNCTION [dbo].[fn_get_questiontype]
(
    @question VARCHAR(max)
)
RETURNS VARCHAR(15)
BEGIN
    DECLARE @questiontype VARCHAR(15), @finalQuestion VARCHAR(15),
    @lnghstring INT;
    DECLARE @commansepques VARCHAR(max)
    DECLARE @T TABLE (words VARCHAR(50))

    INSERT INTO @T VALUES ('Does'),('Who'),('What'),('Are')
                                ,('Do'),('Is'), ('When'),('Which')
                                ,('Whose'),('Can'), ('Should'),('Was')

    SET @questiontype = SUBSTRING(@question,1, CHARINDEX(' ',@question)-1)

    IF @questiontype = ANY(SELECT words from @t)
        SET @finalQuestion = @questiontype
    ELSE
        BEGIN
            IF ((@questiontype = 'How') OR (@questiontype = 'Under') OR (@questiontype
            = 'For')
                OR (@questiontype = 'By') OR (@questiontype = 'To')
                OR (@questiontype = 'In') OR (@questiontype = 'At'))
                AND CHARINDEX(',',@question,1) = 0
                BEGIN
                    SET @lnghstring = LEN(@questiontype)
                    SET @finalQuestion = @questiontype + ' ' +
                    SUBSTRING(@question,@lnghstring+2,
                                CHARINDEX(' ',
                                ,@question,@lnghstring+2) - @lnghstring - 1)
                END
            ELSE IF CHARINDEX(',',@question,1) > 0
                BEGIN
                    SET @commansepques = LTRIM(SUBSTRING (@question,
                    CHARINDEX(',',@question,1) + 1,
                                LEN(@question) -
                    CHARINDEX(',',@question,1)- 1 ))
                    SET @questiontype = SUBSTRING(@commansepques,1,
                    CHARINDEX(' ',@commansepques)-1)
                    IF @questiontype = ANY(SELECT words FROM @t)
```



```

        SET @finalQuestion = @questiontype
    ELSE
    BEGIN
        IF (@questiontype = 'How') OR (@questiontype = 'Under')
    OR (@questiontype = 'For')
        OR (@questiontype = 'By') OR (@questiontype = 'To')
        OR (@questiontype = 'In') OR (@questiontype = 'At')
        BEGIN
            SET @lnghstring =
    LEN(@questiontype)
            SET @finalQuestion = @questiontype
+ '' + SUBSTRING(@commansepques,@lnghstring+2,
        CHARINDEX(' ',@commansepques,@lnghstring+2) - @lnghstring - 1)
        END
    ELSE
    BEGIN
        SET @questiontype = SUBSTRING(@question,1,
    CHARINDEX(' ',@question)-1)
        SET @lnghstring = LEN(@questiontype)
        SET @finalQuestion = @questiontype + '' +
    SUBSTRING(@question,@lnghstring+2,
        CHARINDEX(' ',
    ,@question,@lnghstring+2) - @lnghstring - 1)
        END
    END
    IF @finalQuestion = 'In How'
        SET @finalQuestion = 'In how many'
END
RETURN @finalQuestion
END

```



Code to Find Similar Question

```
CREATE PROC [dbo].[usp_Find_Similar_Question]
@Question Varchar(150) , @n int = 0.5
AS
BEGIN
SET NOCOUNT ON

DECLARE @Q_CD FLOAT
DECLARE @Question_Type VARCHAR(50), @Question_Question_Type
VARCHAR(50)
DECLARE @Question_ID INT, @Question_Type_Ranking INT
DECLARE @RecCount INT
DECLARE @Term VARCHAR(100), @Description varchar(150)
DECLARE @NewQuestion VARCHAR(MAX)
```

```
CREATE TABLE #Que
(Term VARCHAR(100),
Frequency INT,
Soundex_Value varchar(10),
IDF FLOAT,
TFIDF FLOAT)
)

CREATE TABLE #FirstQue
(Term VARCHAR(100),
Soundex_Value varchar(10)
)

INSERT INTO #FirstQue
(Term,Soundex_Value)

SELECT value,SOUNDEX(value) FROM (
SELECT value,Count(1) TF FROM [dbo].[SplitWords](@Question)
WHERE value NOT IN (SELECT Term FROM ExcludedTerms)
GROUP BY value
) P
```

```
CREATE TABLE #FirstQue
(Term VARCHAR(100),
Soundex_Value varchar(10)
)

INSERT INTO #FirstQue
(Term,Soundex_Value)

SELECT value,SOUNDEX(value) FROM (
SELECT value,Count(1) TF FROM [dbo].[SplitWords](@Question)
WHERE value NOT IN (SELECT Term FROM ExcludedTerms)
GROUP BY value
) P
```

```
INSERT INTO #FirstQue
(Term,Soundex_Value)
```

```
SELECT value,SOUNDEX(value) FROM (
SELECT value,Count(1) TF FROM [dbo].[SplitWords](@Question)
WHERE value NOT IN (SELECT Term FROM ExcludedTerms)
GROUP BY value
) P
```

```
SELECT Term,b.[Description] INTO #Temp1 FROM #FirstQue a
INNER JOIN Abbreviations b
ON A.Term = b.Abbreviation
WHERE Soundex_Value NOT IN
(SELECT Soundex_Value FROM GlobalTerms
)
```

```

SELECT @RecCount = COUNT(1) FROM #Temp1
SET @NewQuestion = @Question
WHILE (@RecCount > 0)
BEGIN
    SELECT Top 1 @Term = Term, @Description =Description
    FROM #Temp1

    SET @NewQuestion = REPLACE(@NewQuestion,@Term,@Description)

    DELETE FRom #Temp1 Where Term = @Term
    SELECT @RecCount = COUNT(1) FROM #Temp1
END

INSERT INTO #Que
(Term,Frequency,IDF)

SELECT value,TF,IDF FROM (
SELECT value,Count(1) TF FROM [dbo].[SplitWords](@NewQuestion)
Where value NOT IN (SELECT Term FROM ExcludedTerms)
GROUP BY value
) P
INNER JOIN GlobalTerms GT
ON GT.Term = P.value

UPDATE #Que
SET TFIDF = IDF * Frequency,Soundex_Value = SOUNDEX(Term)
SELECT @Q_CD = SUM(TFIDF * TFIDF) FROM #Que

SELECT @Question_Type = dbo.fn_get_questiontype(@Question)

SELECT TOP 100 T.QuestionID,
    MAX(Q1.Question) Question,100* (SUM(T.TFIDF * Q.TFIDF) )
/ ( MAX(Q1.CosineDistanceQuestionComponent) * @Q_CD ) CD ,
    MAX(Q1.Header) Header,MAX(Q1.QuestionType) Question_Type
INTO #Temp
FROM TermFrequency T
INNER JOIN #Que Q
ON T.Soundex_Value = Q.Soundex_Value
INNER JOIN Question Q1
ON Q1.ID = T.QuestionID
GROUP BY T.QuestionID
ORDER BY 3 DESC

ALTER TABLE #Temp ADD Question_Type_Ranking INT ,Final_Ranking FLOAT;

SET @RecCount = 0

```

```

SELECT @RecCount = COUNT(1) FROM #Temp WHERE
Question_Type_Ranking IS NULL

WHILE (@RecCount > 0)
BEGIN

    SELECT Top 1 @Question_ID = QuestionID,
    @Question_Question_Type = Question_Type FROM #Temp
    WHERE Question_Type_Ranking IS NULL

    IF @Question_Question_Type = @Question_Type
    BEGIN
        SET @Question_Type_Ranking = 3
    END
    ELSE IF CHARINDEX(@Question_Type,@Question_Question_Type,1) > 0
        OR CHARINDEX(@Question_Question_Type,@Question_Type,1) >
0
    BEGIN
        SET @Question_Type_Ranking = 2
    END
    ELSE
    BEGIN
        SET @Question_Type_Ranking = 1
    END

    UPDATE #Temp
    SET Question_Type_Ranking = @Question_Type_Ranking
    WHERE QuestionID = @Question_ID

    SELECT @RecCount = COUNT(1)
    FROM #Temp
    WHERE Question_Type_Ranking IS NULL
END

UPDATE #Temp SET Final_Ranking = POWER( Question_Type_Ranking,@n ) *
CD

SELECT Top 10 QuestionID,Question,Header,ROUND(CD,4) CD
,Question_Type_Ranking,ROUND(Final_Ranking,4) Final_Ranking
FROM #Temp
ORDER BY Final_Ranking DESC

END

```

Appendix D

Code to Find Global Terms

```
SET NOCOUNT ON
TRUNCATE TABLE GlobalTerms
CREATE TABLE #t (Term VARCHAR(150))

DECLARE @Question VARCHAR(MAX)
-----
DECLARE @MyCursor CURSOR
SET @MyCursor = CURSOR FAST_FORWARD
FOR
SELECT Question FROM Question
OPEN @MyCursor
FETCH NEXT FROM @MyCursor
INTO @Question
WHILE @@FETCH_STATUS = 0
BEGIN
SET @Question = REPLACE(@question, '?', '')
SET @Question = REPLACE(@question, ')', '')
SET @Question = REPLACE(@question, '('', '')
SET @Question = REPLACE(@question, ',')
SET @Question = REPLACE(@question, '/', '')
SET @Question = REPLACE(@question, '\', '')
SET @Question = REPLACE(@question, '""', '')

INSERT INTO #t (Term)
SELECT value FROM dbo.SplitWords(@Question)

FETCH NEXT FROM @MyCursor
INTO @Question
END
CLOSE @MyCursor
DEALLOCATE @MyCursor

INSERT INTO GlobalTerms (Term)
SELECT DISTINCT term FROM #t
WHERE Term NOT IN (SELECT Term FROM ExcludedTerms)

DROP TABLE #t
```

Appendix E

Calculation of Cosine Distance and TF-IDF

```
SET NOCOUNT ON
TRUNCATE TABLE GlobalTermSoundex
```

```
UPDATE [dbo].[GlobalTerms]
SET Soundex_Value = SOuNDEX([Term])
```

```
UPDATE [dbo].[TermFrequency]
SET Soundex_Value = SOuNDEX([Term])
```

```
INSERT GlobalTermSoundex
(Soundex_Value,TermCount)
SELECT Soundex_Value, SUM([Score]) Score
FROM [GlobalTerms]
GROUP BY Soundex_Value
```

```
UPDATE G
SET G.Score = P.G
FROM
(SELECT Soundex_Value Soundex_Value, SUM(Frequency) C FROM
TermFrequency
GROUP BY Soundex_Value) P JOIN [GlobalTerms] G
ON G.Soundex_Value = P.Soundex_Value
```

```
DECLARE @N int
```

```
SELECT @N = COUNT(1) FROM Question
```

```
SELECT @N
```

```
UPDATE A
SET A.IDF= B.IDF
FROM
(SELECT Term,Soundex_Value,LOG(@N/[Score]) IDF FROM
[dbo].[GlobalTerms])
B
JOIN TermFrequency A ON
A.Soundex_Value = B.Soundex_Value
```

```
UPDATE [dbo].[TermFrequency]
SET [TFIDF] = Frequency * [IDF]
```

```
UPDATE [dbo].[GlobalTerms]
SET IDF = LOG(@N/[Score])
```

```
UPDATE Q
SET Q.CosineDistanceQuestionComponent = TF.CDQC
FROM
(SELECT QuestionID,SUM (TFIDF * TFIDF) CDQC FROM
[dbo].[TermFrequency]
Group By QuestionID) TF
JOIN Question Q ON TF.QuestionID = Q.ID
```



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Appendix F

Question Type Ranking

Obtaining a best power value of the Question Type Ranking

$$FR = QTR_n * CDR$$

FR – Final Ranking

QTR – Question Type Ranking

CDR – Cosine Distance Ranking

Several Questions were searched for different n values.

Q1.How does the Constitution treat the status of colonies, and territories?

N = 0.5

Question ID	Question	Header	CDR	QTR	FR
195	Sample Question 195	General	0.9715	3	0.9715
197	Sample Question 197	General	0.7491	1	0.7491
112	Sample Question 112	Executive	0.4788	2	0.4788
297	Sample Question 297	Legislature	0.4411	1	0.4411
219	Sample Question 219	General	0.4112	2	0.4112
196	Sample Question 196	General	0.3958	1	0.3958
139	Sample Question 139	Executive	0.3895	1	0.3895
14	Sample Question 14	Criminal Procedure	0.3857	3	0.3857
173	Sample Question 173	Executive	0.3803	1	0.3803
249	Sample Question 249	General	0.3765	1	0.3765

N = 1

Question ID	Question	Header	CDR	QTR	FR
195	Sample Question 195	General	0.9715	3	2.9145
14	Sample Question 14	Criminal Procedure	0.3857	3	1.1571
15	Sample Question 15	Criminal Procedure	0.3219	3	0.9656
112	Sample Question 112	Executive	0.4788	2	0.9577
219	Sample Question 219	General	0.4112	2	0.8223
197	Sample Question 197	General	0.7491	1	0.7491
640	Sample Question 640	Race, Ethnicity,	0.2437	3	0.7312

		and Language			
656	Sample Question 656	Race, Ethnicity, and Language	0.2437	3	0.7312
203	Sample Question 203	General	0.331	2	0.662
77	Sample Question 77	Elections	0.301	2	0.6019

N = 2

Question ID	Question	Header	CDR	QTR	FR
195	Sample Question 195	General	0.9715	3	8.7436
14	Sample Question 14	Criminal Procedure	0.3857	3	3.4713
15	Sample Question 15	Criminal Procedure	0.3219	3	2.8968
640	Sample Question 640	Race, Ethnicity, and Language	0.2437	3	2.1935
656	Sample Question 656	Race, Ethnicity, and Language	0.2437	3	2.1935
112	Sample Question 112	Executive	0.4788	2	1.9153
219	Sample Question 219	General	0.4112	2	1.6447
203	Sample Question 203	General	0.331	2	1.3239
77	Sample Question 77	Elections	0.301	2	1.2038
574	Sample Question 574	Rights	0.2592	2	1.0368

When all the three instances are compared, there are two close questions.

- How does the Constitution treat the status of colonies, protectorates, and territories?
- What specific colonies or protectorates does the Constitution mention?

So the correct questions were identified when n = 0.5

PN: Actual question was removed to avoid plagiarism.

Appendix H Example of a Question

Incident	Dates	References
Death of Colombo District MP. Mr. CV. Gunaratne	7-Jun-2000	Sri Lanka Cabinet Minister of Industries development, Minister Mr.Gunaratne and his wife were killed.
Death of National List MP. Mr. C.V. Gunaratne	12-Aug-2005	
Resignation of National List MP Mr. Samarasinghe	30-Jun-2008	Mr. H. M. Wasantha Samarasinghe resigned to contest the North Central provincial council election
Mr, Mahipala Herath resigned	7-May-2004	Mr. Mahipala Herath resigned to contest the Sabaragamuwa provincial council elections.
Mrs. Chandrika Kumaratunga resigned to take up presidency.	12-Nov-1994	
Mr. Sarath Fonseka removed as he didn't participate parliament for three months	2010	
S,B. Dissanayake removed as he didn't participate parliament for three months	2006	



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Are there provisions for dismissing members of parliament?

Dilan Perera against Dr. Rajitha Senarathne, 1999

Appendix I

Accuracy of SOUNDEX

A130	A153	A516	A162	A223	A225
Abide About	Appointing Appointment	Approval Approve Approved Approves Approving	Affairs Appears	Accused Association	Accession Assign Assigned
A231	A235	A252	A312	A313	A323
Active-duty Activities	Academic Actions	Against Agencies Agency	Advise Advisory	Adopted Adoption	Adequate Attached
A351	A353	A362	A535	A553	A623
Attempt Attempts	Attendance Automatic	Address Authorize Authorized	Anthem Anything	Amend Amendable Amended Amending Amendment Amendments	Arrest Arrested
A632	A652	B220	B230	B255	B300
Artists Arts	Arms Arranged Arrangement Arrangements	Basic Basis	Based Best	Becoming Beginning	Body Both
B520	B636	C134	C200	C325	C420
Bank Being	Birthright Borders Broader	Capital Capitalism	Case Choose	Citizen Citizens Citizenship	Class Clause
C430	C436	C452	C512	C513	C522
Called Child	Children Cultural Culture	Calling Challenge Colonies	Campaigns Compose Convicted	Competitive Confederal	Census Consist
C514	C515	C516	C523	C524	C525
Compulsory Conflict	Compensation Convene	Chamber Chambers Confront	Consider Considered Constituent Constitution Constitutional	Consult Consults Council Counsel	Commission Conscience Conscientious Consumer

			Constitution ality Constitution s		
C526	C530	C532	C533	C536	C553
Censorship Concerning	Cannot Committee	Committe es Conduct	Committed Conditions	Central Contrary Controls Counter Countries Country	Commander Commanders Comments Communities
C630	C632	C635	C655	D000	D125
Cohort Court	Cohorts Courts	Certain Coordinat ed Credential	Criminal Criminals	Day Die	Division Divisions
D153	D225	D236	D246	D252	D255
Defendants Definition Depending	Decision Decisions	Distribute d District Districts	Declaration Declarations Declare	Dismiss Dismissal Dismissed Dismissin g	Document Documents
D261	D300	D320	D365	D526	E123
Described Describes	Date Death Duty	Duties Duties	Determinati on Determinati ons Determine Determined Determines	Democrac y Democrati c	Effect Episodes
E214	E215	E216	E223	E231	E236
Explicit Explicitly	Expansion Expense	Expiration Express Expressio n Expropriat e Expropriat ion	Executive Executives	Establish Establishe d	External Extradition Extraordinary
E255	E423	E536	F400	F420	F530
Economic Examine	Elected Election Elections Electoral Electors Electronic	Enter Entered Entirety Entry	Feel Full	False Files Flag	Find Found
F540	F552	F600	F623	F625	F654
Family Final	Finance Financial	Fair Free	First First-level	Foreign Foreigner	Formally Formula

	Financing		Forced Fraction		
G165	G564	G653	H430	I353	I512
Government Governmental Governments Governor	General Generally	Grand Grant Granted Granting Grounds Guarantee	Health Healthy Held	Identified Identify	Investigate Investment
I514	I516	I523	I524	I526	I531
Implementa tion Implemente d Inviolable Involved Involvement	Important Imprisoned Imprisonment	Institution Institutions Instrument s	Include Included Including	Incorporate Incorporated Incrimination	Independence Independent Individual Individually Individuals
I532	I533	I536	J232	L100	L140
Indicted Indicting Indigenous Integration	Initiate Initiates Initiative Initiatives	Interesting International Interpellate Interpretation Interpreter Intervention Introduction	Justice Justices	Levy Life	Label Level
L142	L200	L224	L230	L240	L522
Levels Libelous	Laws Law	Legislate Legislation Legislative Legislators Legislature Legislatures	Last Least List	Legal Likely Local	Language Languages
M230	M300	M500	M516	M523	M535
Most Must	Media Mode Motto	Man Men Money	Member Members Membership	Minister Ministers	Mention Mentioned
M600	N354	N364	N400	N500	N516



Marry More	National Nationals	Natural Naturaliza tion Naturalize d	Newly New	Name Non- derogable Non- discrimina tion	Number Numbered Numbering
N553	O155	O163	O500	O520	O625
Nominated Nominates Nomination Nominations	Opinion Opinions	Operation Operations Opportuni ty Overridde n Override Overthrow	On Own	Once Ones	Organic Organizations Organs Original
P142	P230	P420	P600	P612	P613
Public Published	Passed Post	Place Please Policy	Power Pre-trial	Previous Privacy Profession Proposal Propose Proposes Provision Provisions Purposes	Private Prohibit Prohibited Prohibition Provide Provided
P616	P620	P622	P623	P625	P626
Preference Preferred Property Proportion	Powers Press	Process Processes Prosecutio n Prosecutor	Presides Procedure Procedures Proceed	Person Personalit y Presumpti on	Prescribe Preservation Progress
P630	P632	P652	P653	P654	R120
Part Party	Participati on Particular Parties Parts Protect Protected Protecting Protection Protectorat es	Principle Principles	Print Promote	Promulgat ed Promulgat ion	Reviews Revoke
R142	R162	R163	R215	R223	R225
Replaced Replaceme nt Replacing	Representa tion Representa tive	Referred Reporting	Responsibili ties Responsibili ty	Registry Reject	Recognize Resign



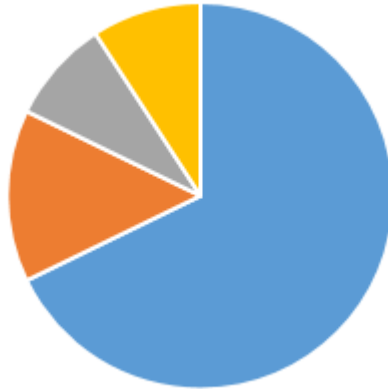
	Representing		Responsible		
R230	R232	R236	R243	R261	R263
Rest Right	Right Rights	Restart Restraint Restrict Restriction Restrictions	Regulate Regulations Regulatory	Reserve Reserved	Record Recruitment Regard Regarding Regards Required
R400	R420	S100	S121	S123	S124
Role Rule	Release Rules	Safe Shape	Specific Specifically Specified Specify Specifying	Subsidiary Substantive	Special Specialized
S153	S162	S163	S200	S225	S235
Spending Subnational	Sovereignty Suffrage	Separate Separation Support	Sex Size Such	Secessions Secession	Section Sections System
S242	S253	S263	S300	S320	S332
Socialism Socialist	Second Second-level Sequentially	Secret Security	Said Set	Seats Stage	States Status
S353	S362	S410	S423	S436	S500
Standard Standing	Strike Structure	Self Self-determination	Selected Selecting Selection	Shelter Solidarity	Same Sine Some
S546	S610	S612	T120	T200	T230
Similar Similarly	Serve Survey	Serves Service	Topic Topics Types	Take Tax These Those Took Twice	Text Thought
T623	T630	T632	T636	T652	U525
Theorists Throughout	Third Third-level Trade Treat Tried Truth	Towards Treaties	Territorial Territories Territory Torture	Terms Transfer Transitional Translated	Unconstitutional Unconstitutionality
U536	V300	V320	V352	W200	W336
Under Understand	Veto Void Vote	Vetoes Votes	Vetoing Voting	Was Which Whose	Withdraw Withdrawal

Understand s Unitary					
W430	W635				
Wealth Would	Writing Written				



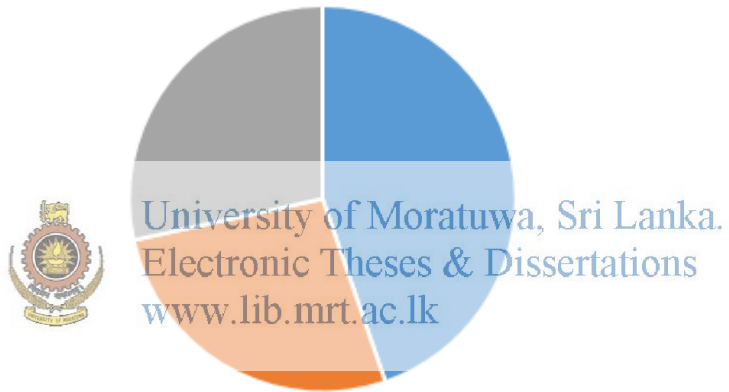
University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Accuracy of SOUNDEX



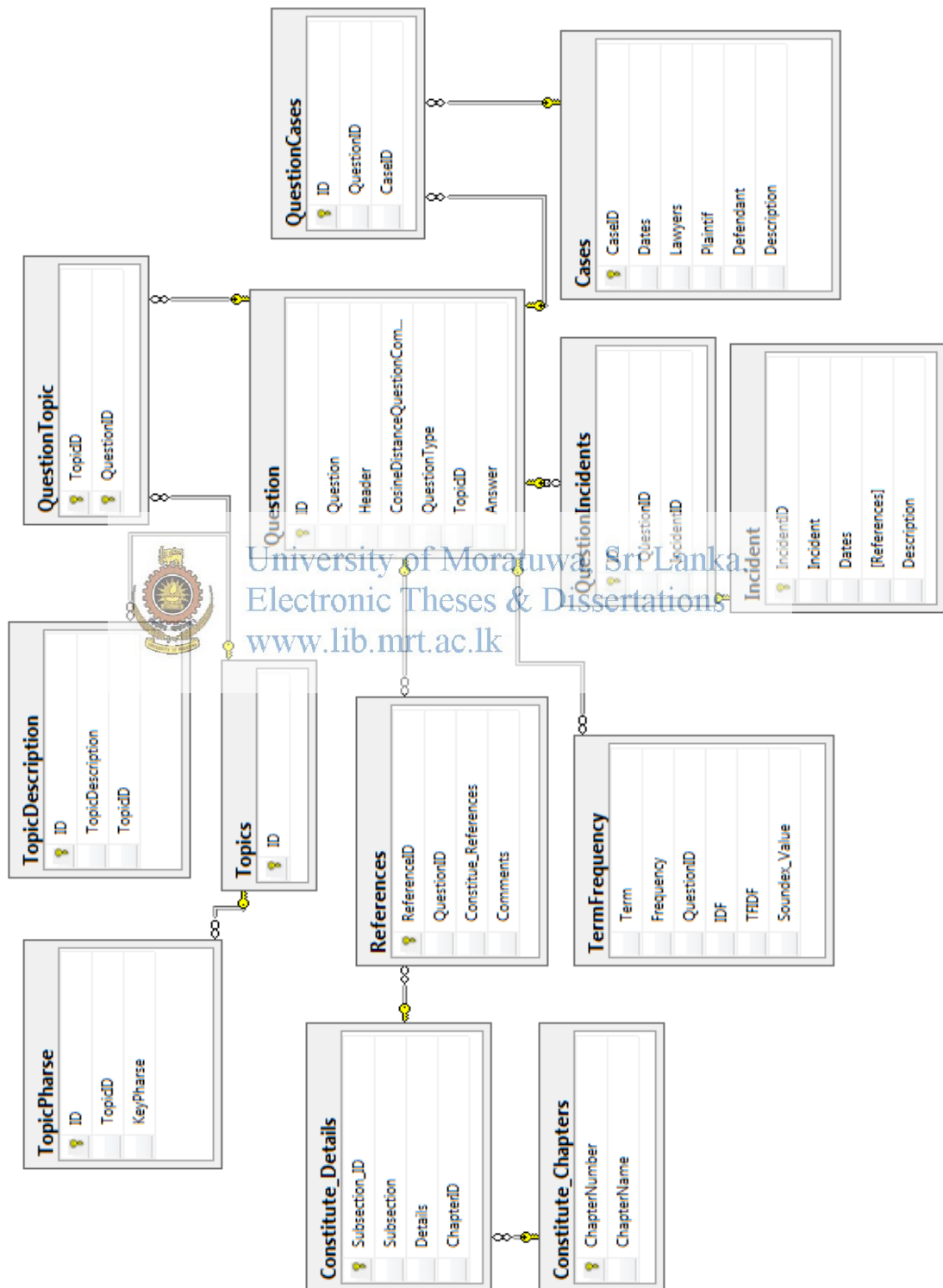
■ Single Word ■ Not Matched ■ Perfectly Mathced ■ Partity Matched

Accuracy of SOUNDEX



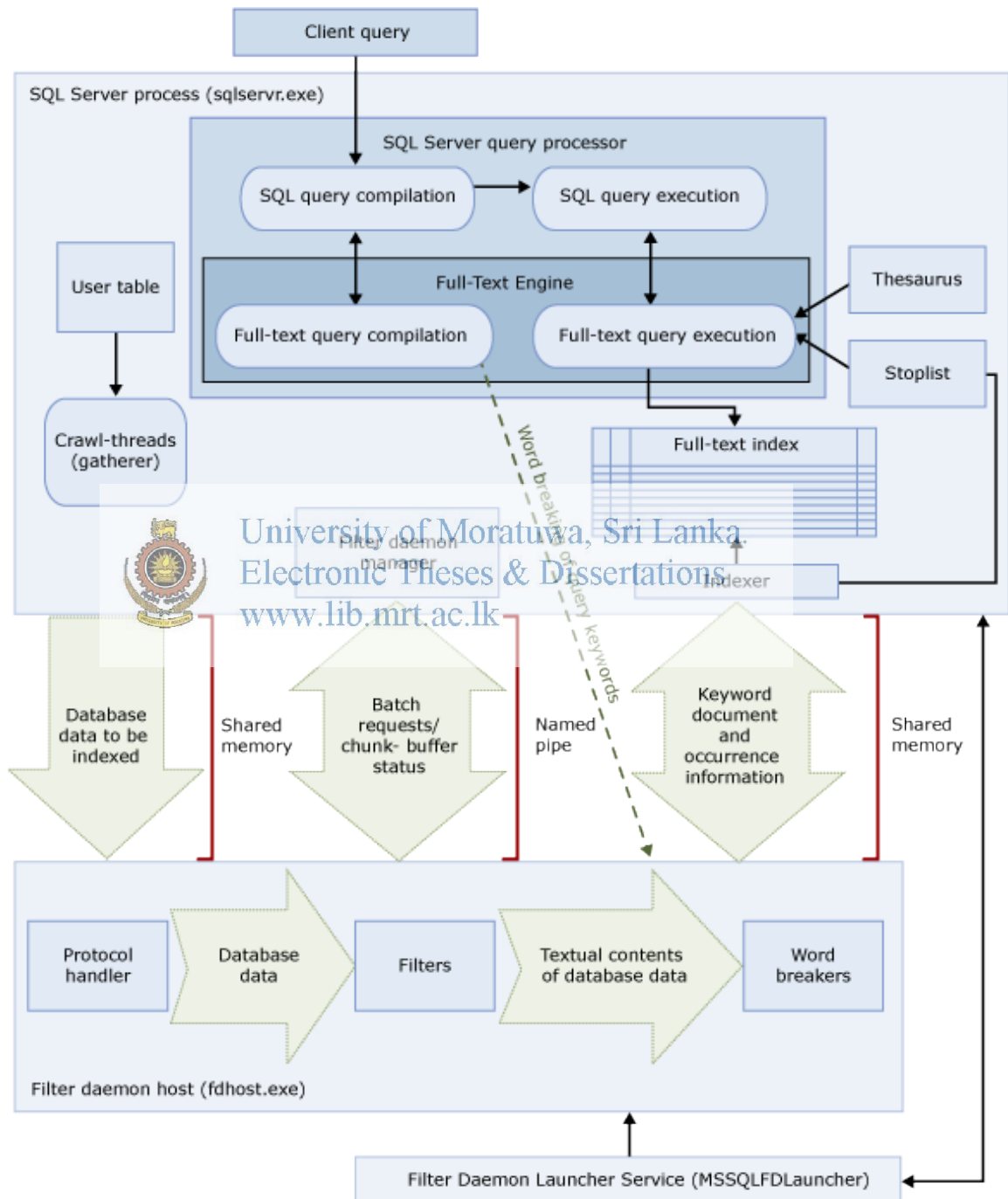
■ Single Word ■ Not Matched ■ Perfectly Mathced

E-R Diagram



Appendix K

Overview of Full Text Search Architecture of SQL Server



Interfaces of HeinOnline Legal Systems

Field search for: in word phrase

AND in word phrase

AND in word phrase

Subject:

- Accounting
- Administrative Law
- Admiralty
- Advocacy

Help with this feature

OR

All Titles

- ABA Antitrust Section
- ABA J.
- ABA Sec. Admin. L. Ann. Rep. Comm.
- ABA Sec. Admin. L. Ann. Rep. Div. & Comm.
- ABA Sec. Corp., Banking & Bus. L. Proc.
- ABA Sec. Crim. L. Program & Comm. Rep.
- ABA Sec. Fam. L. Proc.
- ABA Sec. Ins. Neg. & Comp. L. Proc.
- ABA Sec. Intell. Prop. L. Ann. Rep.

Date: (YYYY) To: (YYYY) Sort by:

Search

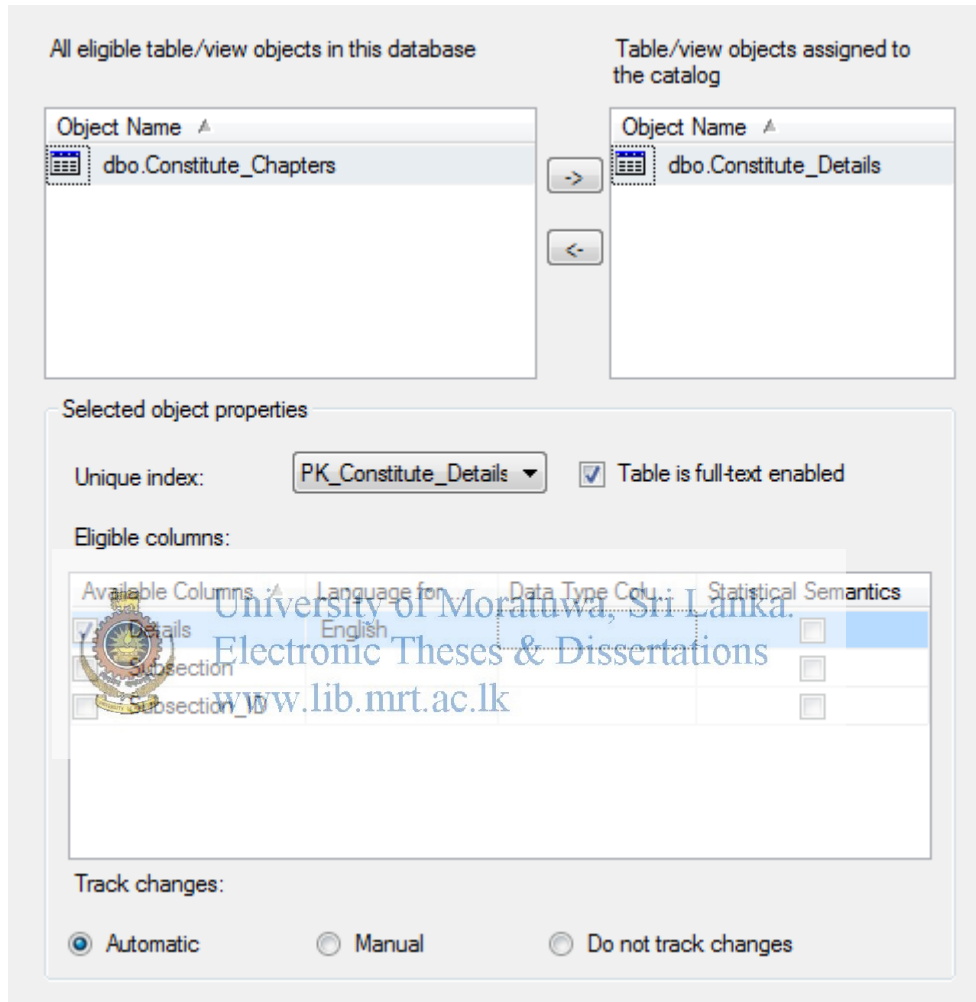
Section Types To Search: All Sections

- Articles
- Comments
- Notes
- Reviews
- Legislation
- Cases
- Decisions
- Contents
- Editorials
- Miscellaneous

Include external articles (articles outside of HeinOnline) in the search results [What is this?](#)

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Configuration of Full Text Search in SQL Server



Enabling Full Text Search

In the above configuration automatic track change option is selected.

Since the legal content is changing with the amendments and new judgments, full text needs to be rebuild with a given schedule as shown in below figure.



University of Moratuwa, Sri Lanka.
 Scheduling Full-Text Search Rebuilding
 Electronic Theses & Dissertations
www.lib.mrt.ac.lk

As shown in the above figure, every day full text search is rebuilding. However, end user has the option of modifying the schedule depending on the need.

Accent Sensitive is also enabled as shown in figure below.

Unique Key Count	645
Item Count	88
Owner	dbo
Accent Sensitive	True
Catalog Size	0 MB
Default Catalog	False

Enabling Accent Sensitivity

User Interface of Proposed System

The screenshot shows the 'First Aid Home Lawyer' application window. It has a menu bar with 'File', 'Question', and 'About'. Below the menu, there are two search options: 'Content Search' (selected) and 'Full Text Search'. Both have a text input field containing the word 'Person'. A 'Search' button is located below the input fields. Below the search area is a table with the following data:

Chapter Number	Chapter Name	Sub Section	Sub Section Name	Description
3	FUNDAMENTAL RIGHTS	10	Freedom of thought, c...	Every person is entitled to freedom of thought, conscience a...
3	FUNDAMENTAL RIGHTS	11	Freedom from torture	No person shall be subjected to torture or to cruel, inhuman o...
3	FUNDAMENTAL RIGHTS	12.2	Right to equality	No citizen shall be discriminated against on the grounds of ra...
3	FUNDAMENTAL RIGHTS	12.3	Right to equality	No person shall, on the grounds of race, religion, language, c...
3	FUNDAMENTAL RIGHTS	13.1	Freedom from arbitrary ...	No person shall be arrested except according to procedure e...
3	FUNDAMENTAL RIGHTS	13.2	Freedom from arbitrary ...	Every person held in custody, detained or otherwise deprived...
2	FUNDAMENTAL RIGHTS	13.2	Freedom from arbitrar...	Any person charged with an offence shall be entitled to be h...

Below the table, a text box contains the following text: "Every person is entitled to freedom of thought, conscience and religion, including the freedom to have or to adopt a religion or belief of his choice".



University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

This screenshot is similar to the one above, but with 'Full Text Search' selected. The search input field still contains 'Person'. The table below shows a different set of results:

Chapter Number	Chapter Name	Sub Section	Sub Section Name	Description
3	FUNDAMENTAL RIGHTS	10	Freedom of thought, c...	Every person is entitled to freedom of thought, conscience a...
3	FUNDAMENTAL RIGHTS	11	Freedom from torture	No person shall be subjected to torture or to cruel, inhuman o...
3	FUNDAMENTAL RIGHTS	12.1	Right to equality	All persons are equal before the law and are entitled to the e...
3	FUNDAMENTAL RIGHTS	12.2	Right to equality	No citizen shall be discriminated against on the grounds of ra...
3	FUNDAMENTAL RIGHTS	12.3	Right to equality	No person shall, on the grounds of race, religion, language, c...
3	FUNDAMENTAL RIGHTS	12.4	Right to equality	Nothing in this Article shall prevent special provision being m...
2	FUNDAMENTAL RIGHTS	13.1	Freedom from arbitrar...	No person shall be arrested except according to procedure e...

The text box below the table contains the same text as in the first screenshot: "Every person is entitled to freedom of thought, conscience and religion, including the freedom to have or to adopt a religion or belief of his choice".

EasyQuestionSearch

Question:

Does the constitution provide for at least one procedure for amending the constitution

Get Matching Question

Question	Label	CD Rank	QT Rank	Final Ra...
Does the constitution provide for at least one procedure for amending the constitution?	Amending	2.0655	3	2.0655
Who approves amendments to the constitution?	Amending	1.0912	1	1.0912
Which provisions are not amendable?	Amending	1.0199	1	1.0199
What are the details of the amendment proposal process?	Amending	0.6858	1	0.6858
What languages does the constitution list as national?	Race, Ethnicity...	0.6713	1	0.6713
What are the details for the amendment approval process?	Amending	0.6521	1	0.6521
Does the constitution provide for a right of privacy?	Rights	0.6303	3	0.6303
What proportion of the vote is needed to approve a constitutional amendment?	Amending	0.5557	1	0.5557
What languages does the constitution list as official?	Race, Ethnicity...	0.5481	1	0.5481

Get References

No Matching Questions

QuestionReferences

University of Moratuwa, Sri Lanka.
Electronic Theses & Dissertations
www.lib.mrt.ac.lk

Does the constitution provide for at least one procedure for amending the constitution?

Answers | Constitution Reference | Incidents | Cases

Chapter Number	Chapter Name	Sub Section	Sub Section Name	Description
12	THE LEGISLATURE - Ame...	82.1	Amendment or repeal ...	No Bill for the amendment of any provision of the Constitution...
12	THE LEGISLATURE - Ame...	82.2	Amendment or repeal ...	No Bill for the repeal of the Constitution shall be placed on th...
12	THE LEGISLATURE - Ame...	82.3	Amendment or repeal ...	If in the opinion of the Speaker, a Bill does not comply with th...
12	THE LEGISLATURE - Ame...	82.4	Amendment or repeal ...	Notwithstanding anything in the preceding provisions of this ...
12	THE LEGISLATURE - Ame...	82.5	Amendment or repeal ...	A Bill for the amendment of any provision of the Constitution ...
12	THE LEGISLATURE - Ame...	82.6	Amendment or repeal ...	No provision in any law shall, or shall be deemed to, amend, r...
12	THE LEGISLATURE - Ame...	82.7	Amendment or repeal ...	In this Chapter, "amendment" includes repeal, alteration and ...

No Bill for the repeal of the Constitution shall be placed on the Order Paper of Parliament unless the Bill contains provisions replacing the Constitution and is described in the long title thereof as being an Act for the repeal and replacement of the Constitution.