PUNE INSTITUTE OF COMPUTER TECHNOLOGY DHANKAWADI, PUNE – 43.

LAB MANUAL

ACADEMIC YEAR: 2016-2017

DEPARTMENT: INFORMATION TECHNOLOGYDate: - 14/12/2016

CLASS: B. E. SEMESTER: II

SUBJECT: SOFTWARE LAB VI

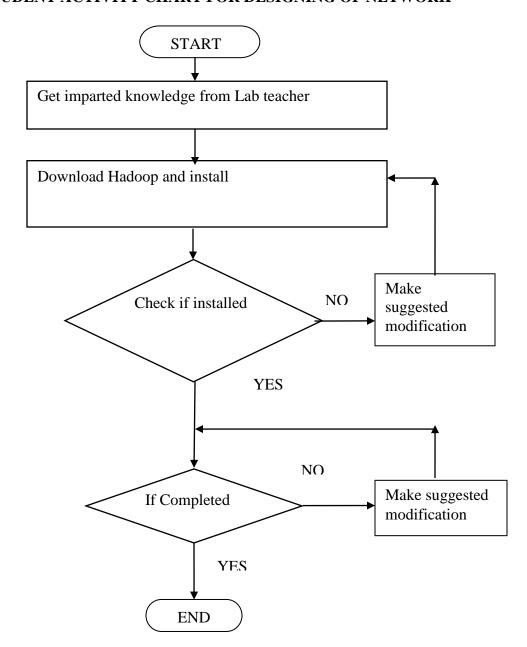
INDEX OF LAB EXPERIMENTS

LAB EXPT. NO.	PROBLEM STATEMENT	REVISED ON
1.	STUDY AND CONFIGURE HADOOP FOR BIG DATA	14/12/2016
2.	STUDY OF NOSQL DATABASES SUCH AS HIVE/ HBASE/ CASSENDRA/ DYNAMODB	14/12/2016
3.	DESIGN DATA MODEL USING NOSQL DATABASES SUCH AS HIVE/ HBASE/ CASSENDRA/ DYNAMODB	14/12/2016
4.	IMPLEMENT ANY ONE PARTITIONING TECHNIQUE IN PARALLEL DATABASES	14/12/2016
5.	IMPLEMENT TWO PHASE COMMIT PROTOCOL IN DISTRIBUTED DATABASES	14/12/2016
6.	DESIGN PERSISTENT OBJECTS USING JDO AND IMPLEMENT MIN 10 QUERIES ON OBJECTS USING JDOQL IN OBJECTDB NOSQL DATABASE	14/12/2016
7.	CREATE XML, XML SCHEMAS, DTD FOR ANY DATABASE APPLICATION AND IMPLEMENT MIN 10 QUERIES USING XQUERY FLOWR EXPRESSION AND XPATH	14/12/2016
8.	DESIGN DATABASE SCHEMAS AND IMPLEMENT MIN 10 QUERIES USING HIVE/ HBASE/ CASSENDRA COLUMN BASED DATABASES	14/12/2016
9.	DESIGN DATABASE SCHEMAS AND IMPLEMENT MIN 10 QUERIES USING DYNAMODBKEYVALUE BASED DATABASES	14/12/2016
10.	IMPLEMENT WEB PAGE RANKING ALGORITHM	14/12/2016
11.	IMPLEMENT ANY ONE MACHINE LEARNING ALGORITHM FOR CLASSIFICATION / CLUSTERING TASK IN BIG DATA ANALYTICS	14/12/2016
12.	DESIGN AND IMPLEMENT SOCIAL WEB MINING APPLICATION USING NOSQL DATABASES, MACHINE LEARNING ALGORITHM, HADOOP AND JAVA/.NET	14/12/2016

Subject Coordinator	Head of Department
Prof. R. B. Murumkar	Dr. S. C. Dharmadhikari

	Revised On: 14/12/2016
TITLE	Hadoop
PROBLEM STATEMENT /DEFINITION	STUDY AND CONFIGURE HADOOP FOR BIG DATA
OBJECTIVE	To learn how to install and configure Hadoop
S/W PACKAGES AND HARDWARE APPARATUS USED	LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE
REFERENCES	Hadoop, O'Reilly Publications. HTTPS://HADOOP.APACHE.ORG HTTP://HADOOP.APACHE.ORG/DOCS/R2.7.1/HADOOP-PROJECT- DIST/HADOOP-COMMON/SINGLECLUSTER.HTML
INSTRUCTIONS FOR WRITING JOURNAL	TITLE Asignment no PROBLEM STATEMENT OBJECTIVE THEORY SETUP FAQ REFERENCES

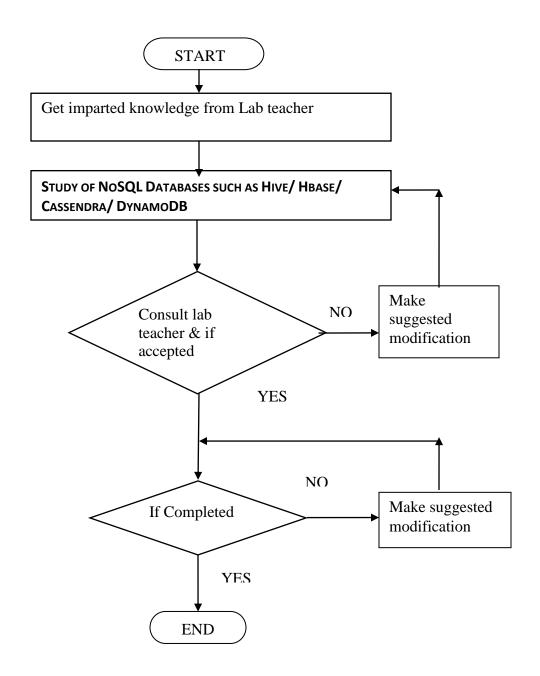
Subject Coordinator	Head of Department
Prof. R. B. Murumkar	Dr. S. C. Dharmadhikari



	Revised On: 14/12/2016
TITLE	NOSQL DATABASES
PROBLEM STATEMENT	STUDY OF NOSQL DATABASES SUCH AS HIVE/ HBASE/ CASSENDRA/ DYNAMODB
/DEFINITION	
OBJECTIVE	To learn to install NoSQL databases.
	To study commands in the selected database
S/W PACKAGES	Linux OS: Fedora/ubuntU
AND	PC WITH THE CONFIGURATION AS
HARDWARE	PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR,
APPARATUS	Keyboard, Mouse
USED	
REFERENCES	http://nosql-database.org/
STEPS	Refer to student activity flow chart
INSTRUCTIONS	TITLE
FOR	ASSIGNMENT NO
WRITING	PROBLEM STATEMENT
JOURNAL	OBJECTIVE
	THEORY
	INPUT
	OUTPUT
	FAQ
	REFERENCES

Subject Coordinator Head of Department
Prof. R. B. Murumkar Dr. S. C. Dharmadhikari

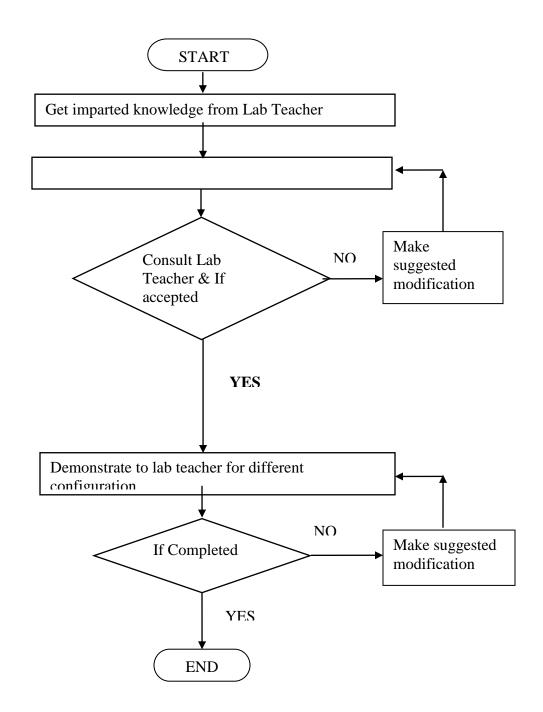
STUDENT ACTIVITY CHART FOR CONFIGURATION OF VOIP



	Revised OII: 14/12/2010	
TITLE	DATA MODEL USING NOSQL DATABASES	
PROBLEM STATEMENT /DEFINITION	DESIGN DATA MODEL USING NOSQL DATABASES SUCH AS HIVE/ HBASE/ CASSENDRA/ DYNAMODB	
OBJECTIVE	To learn data modeling for NoSQL	
S/W PACKAGES AND HARDWARE APPARATUS USED	LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE	
REFERENCES	http://nosql-database.org/	
STEPS	Refer to student activity flow chart	
INSTRUCTIONS FOR WRITING JOURNAL	TITLE ASSIGNMENT NO PROBLEM STATEMENT OBJECTIVE THEORY INPUT OUTPUT FAQ REFERENCES	

Subject Coordinator	Head of Department
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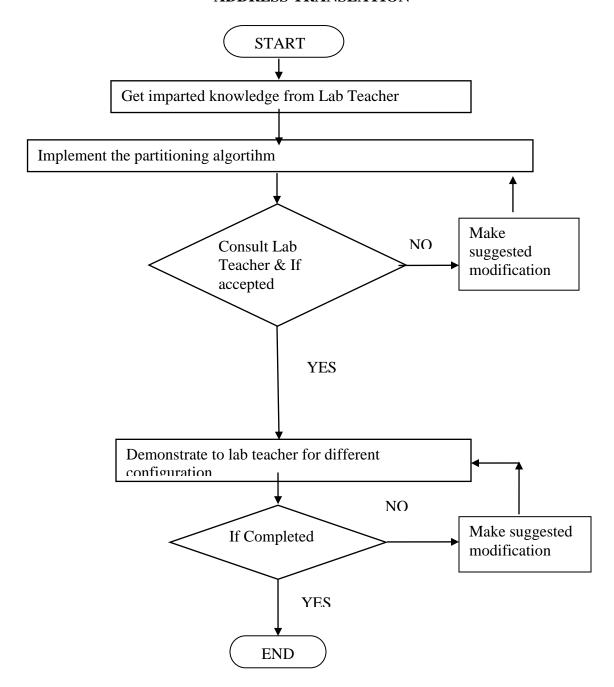
STUDENT ACTIVITY CHART FOR CONFIGURATION OF BORDER GATEWAY PROTOCOL (BGP)



TITLE	PARALLEL DATABASES
PROBLEM STATEMENT /DEFINITION	IMPLEMENT ANY ONE PARTITIONING TECHNIQUE IN PARALLEL DATABASES
OBJECTIVE	To learn and implement partitioning technique in parallel databases
S/W PACKAGES AND HARDWARE APPARATUS USED	LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE
REFERENCES	Silberschatz A., Korth H., Sudarshan S., "Database System Concepts", 6thEdition, McGraw Hill Publishers, ISBN 0-07-120413-X.
STEPS	Refer to student activity flow chart
INSTRUCTIONS FOR WRITING JOURNAL	TITLE ASSIGNMENT NO PROBLEM STATEMENT OBJECTIVE THEORY SETUP INPUT OUTPUT FAQ REFERENCES

Subject Coordinator	Head of Department
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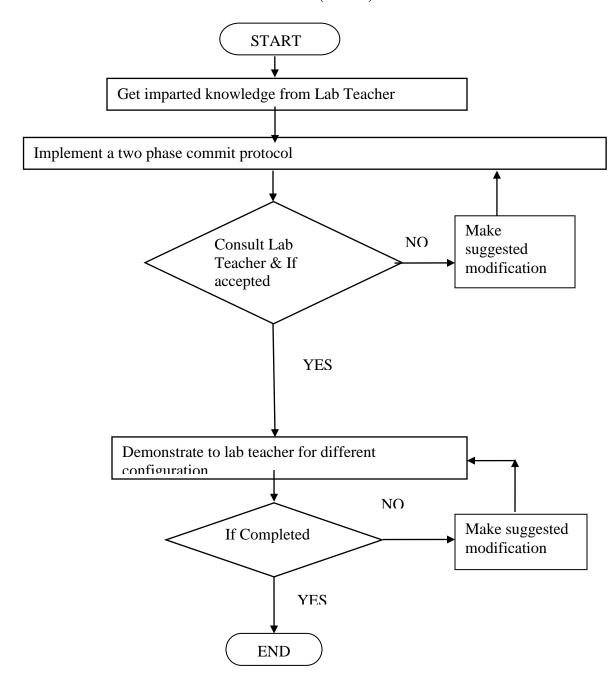
STUDENT ACTIVITY CHART FOR CONFIGURATION OF NETWORK ADDRESS TRANSLATION



T
Distributed Databases
Implement Two Phase commit protocol in Distributed Databases
To study and implement Two Phase commit protocol in Distributed
Databases
LINUX OS: FEDORA/UBUNTU
PC WITH THE CONFIGURATION AS
PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR,
Keyboard, Mouse
Silberschatz A., Korth H., Sudarshan S., "Database System Concepts",
6thEdition, McGraw Hill Publishers, ISBN 0-07-120413-X.
Refer to student activity flow chart
TITLE
ASSIGNMENT NO
PROBLEM STATEMENT
OBJECTIVE
THEORY
SETUP
INPUT
OUTPUT
FAQ
REFERENCES

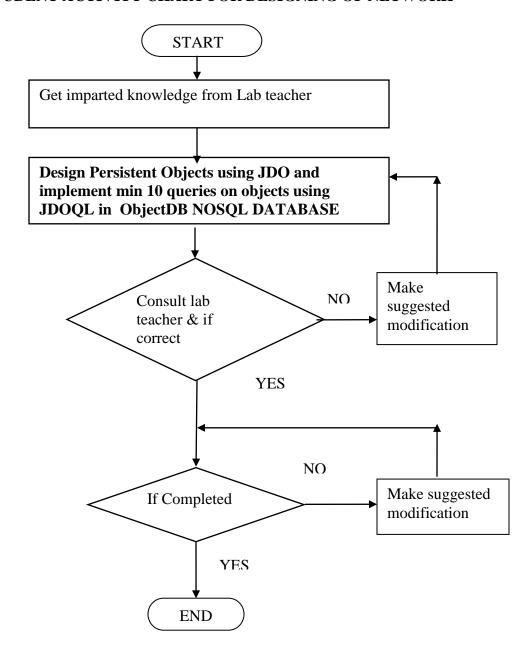
Subject Coordinator	Head of Department
Prof. R. B. Murumkar	Dr. S. C. Dharmadhikari

STUDENT ACTIVITY CHART FOR STUDY OF MULTIPROTOCOL LABEL SWITCHING (MPLS)



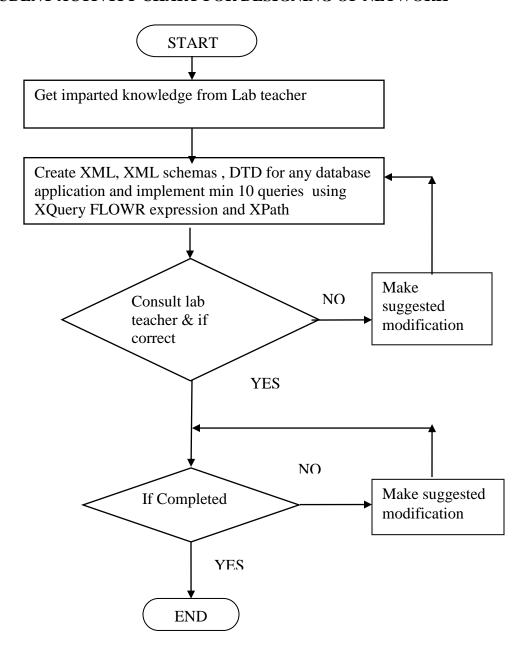
TITLE	ObjectDB NOSQL DATABASE
PROBLEM STATEMENT /DEFINITION	Design Persistent Objects using JDO and implement min 10 queries on objects using JDOQL in ObjectDB NOSQL DATABASE
OBJECTIVE	To learn and design Persistent Objects using JDO and implement min 10 queries on objects using JDOQL in ObjectDB NOSQL DATABASE
S/W PACKAGES AND HARDWARE APPARATUS USED	LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE
REFERENCES	http://www.objectdb.com/database/jdo
STEPS	Refer to student activity flow chart
INSTRUCTIONS FOR WRITING JOURNAL	TITLE ASSIGNMENT NO PROBLEM STATEMENT OBJECTIVE THEORY SETUP INPUT OUTPUT FAQ REFERENCES

Subject Coordinator	Head of Department
Prof. R. B. Murumkar	Dr. S. C. Dharmadhikari



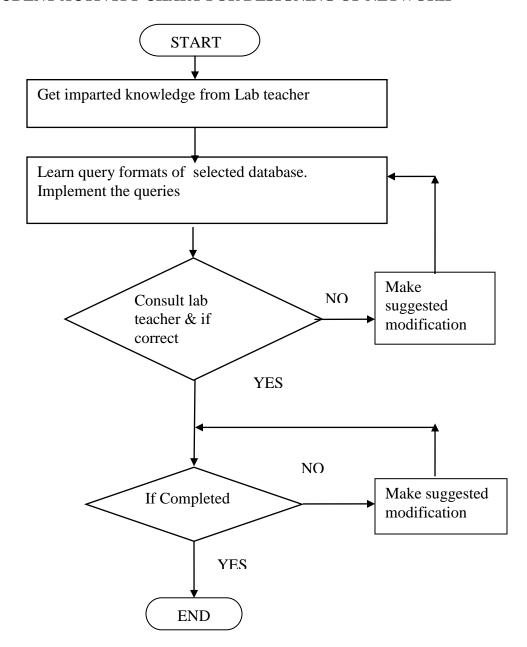
	Revised On: 14/12/2016
TITLE	XML, XML schemas, DTD
PROBLEM	Create XML, XML schemas, DTD for any database application and
STATEMENT	implement min 10 queries using XQuery FLOWR expression and
/DEFINITION	XPath
OBJECTIVE	Select a database application
	Create XML, XML schemas , DTD it
	Implement min 10 queries using XQuery FLOWR expression and
	XPath
S/W PACKAGES	LINUX OS: FEDORA/UBUNTU
AND	PC WITH THE CONFIGURATION AS
HARDWARE	PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE
APPARATUS	KETBOARD, MOUSE
USED	
REFERENCES	Silberschatz A., Korth H., Sudarshan S., "Database System Concepts",
	6thEdition, McGraw Hill Publishers, ISBN 0-07-120413-X.
STEPS	Refer to student activity flow chart
INSTRUCTIONS	TITLE
FOR	ASSIGNMENT NO
WRITING	PROBLEM STATEMENT
JOURNAL	OBJECTIVE
	THEORY
	INPUT
	OUTPUT
	FAQ
	REFERENCES

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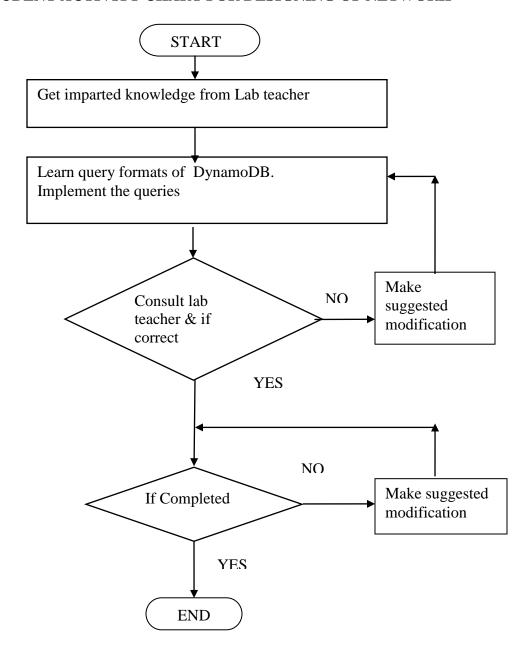
PROBLEM STATEMENT //DEFINITION OBJECTIVE To learn query formats of selected database. To implement the queries S/W PACKAGES AND HARDWARE APPARATUS USED REFERENCES http://nosql-database.org/ TITLE NoSQL database schemas for column based database To dearn query formats of selected database. To implement the queries To learn query formats of selected database. To implement the queries LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHZ. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE STEPS Refer to student activity flow chart TITLE ASSIGNMENT NO PROBLEM STATEMENT OBJECTIVE THEORY SETUP		Revised On: 14/12/2016
STATEMENT /DEFINITION OBJECTIVE To learn query formats of selected database. To implement the queries S/W PACKAGES AND HARDWARE APPARATUS USED REFERENCES http://nosql-database.org/ STEPS Refer to student activity flow chart INSTRUCTIONS FOR WRITING JOURNAL Black Cassendra column based databases To learn query formats of selected database. To implement the queries To implement the queries ASSIGNAL TO HEARD ASSIGNATION AS PENTIUM IV 1.7 GHZ. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE INSTRUCTIONS FOR ASSIGNMENT NO PROBLEM STATEMENT OBJECTIVE THEORY	TITLE	NoSQL database schemas for column based database
STATEMENT /DEFINITION OBJECTIVE To learn query formats of selected database. To implement the queries S/W PACKAGES AND HARDWARE APPARATUS USED REFERENCES http://nosql-database.org/ STEPS Refer to student activity flow chart INSTRUCTIONS FOR WRITING JOURNAL Black Cassendra column based databases To learn query formats of selected database. To implement the queries To implement the queries ASSIGNAL TO HEARD ASSIGNATION AS PENTIUM IV 1.7 GHZ. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE INSTRUCTIONS FOR ASSIGNMENT NO PROBLEM STATEMENT OBJECTIVE THEORY		
To learn query formats of selected database. To implement the queries	PROBLEM	Design database schemas and implement min 10 queries using Hive/
OBJECTIVE To learn query formats of selected database. To implement the queries LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHZ. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE REFERENCES http://nosql-database.org/ STEPS Refer to student activity flow chart INSTRUCTIONS FOR WRITING JOURNAL OBJECTIVE THEORY	STATEMENT	Hbase/ Cassendra column based databases
S/W PACKAGES AND HARDWARE APPARATUS USED REFERENCES Refer to student activity flow chart INSTRUCTIONS FOR WRITING JOURNAL To implement the queries LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE THEORY LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE THEORY LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE THEORY	/DEFINITION	
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AND HARDWARE APPARATUS USED REFERENCES http://nosql-database.org/ Refer to student activity flow chart INSTRUCTIONS FOR WRITING JOURNAL PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE TITLE ASSIGNMENT NO PROBLEM STATEMENT OBJECTIVE THEORY		
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REFERENCES http://nosql-database.org/ STEPS Refer to student activity flow chart INSTRUCTIONS TITLE FOR ASSIGNMENT NO WRITING PROBLEM STATEMENT OBJECTIVE THEORY		KETBOARD, WOOSE
STEPS Refer to student activity flow chart INSTRUCTIONS FOR ASSIGNMENT NO WRITING PROBLEM STATEMENT OBJECTIVE THEORY		
INSTRUCTIONS FOR ASSIGNMENT NO WRITING PROBLEM STATEMENT OBJECTIVE THEORY	REFERENCES	http://nosql-database.org/
INSTRUCTIONS FOR ASSIGNMENT NO WRITING PROBLEM STATEMENT OBJECTIVE THEORY		
FOR ASSIGNMENT NO WRITING PROBLEM STATEMENT OBJECTIVE THEORY	STEPS	Refer to student activity flow chart
FOR ASSIGNMENT NO WRITING PROBLEM STATEMENT OBJECTIVE THEORY		
WRITING JOURNAL OBJECTIVE THEORY	INSTRUCTIONS	TITLE
JOURNAL OBJECTIVE THEORY	FOR	ASSIGNMENT NO
THEORY	WRITING	PROBLEM STATEMENT
	JOURNAL	OBJECTIVE
SETUP		THEORY
		SETUP
INPUT		INPUT
OUTPUT		OUTPUT
FAQ		FAQ
REFERENCES		REFERENCES

Subject Coordinator	Head of Department
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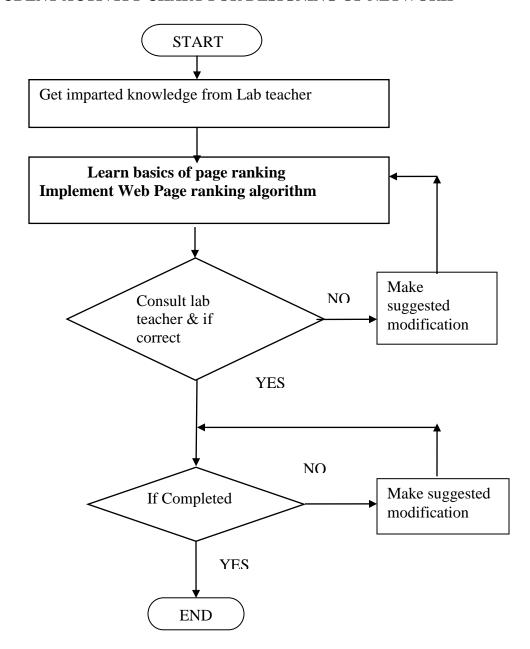
_	Revised Off. 14/12/2010
TITLE	NoSQL database schemas using DynamoDB key Value based databases
PROBLEM	Design database schemas and implement min 10 queries using
STATEMENT	DynamoDB key Value based databases
/DEFINITION	
OBJECTIVE	To learn query formats of DynamoDB
	To implement the queries
S/W PACKAGES	LINUX OS: FEDORA/UBUNTU
AND	PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR,
HARDWARE	Keyboard, Mouse
APPARATUS	
USED	http://pagel.database.org/
REFERENCES	http://nosql-database.org/
STEPS	Refer to student activity flow chart
INSTRUCTIONS	TITLE
FOR	ASSIGNMENT NO
WRITING	PROBLEM STATEMENT
JOURNAL	OBJECTIVE
	THEORY
	SETUP
	INPUT
	OUTPUT
	FAQ
	REFERENCES

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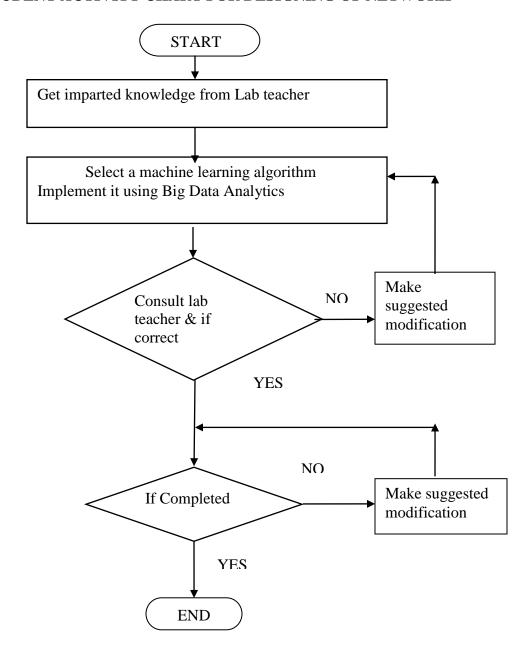
	Revised On: 14/12/2016
TITLE	Web Page ranking
PROBLEM STATEMENT /DEFINITION	Implement Web Page ranking algorithm
OBJECTIVE	Learn basics of page ranking Implement Web Page ranking algorithm
S/W PACKAGES AND HARDWARE APPARATUS USED	LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE
REFERENCES	Data Mining: Concepts and Techniques by Jiawei Han, MichelineKamber, Jian Pei, Elsevier.
STEPS	Refer to student activity flow chart
INSTRUCTIONS FOR WRITING JOURNAL	TITLE ASSIGNMENT NO PROBLEM STATEMENT OBJECTIVE THEORY INPUT OUTPUT FAQ REFERENCES

Subject Coordinator	Head of Department
Prof. R. B. Murumkar	Dr. S. C. Dharmadhikari



	Revised OII: 14/12/2010
TITLE	Machine learning algorithm
PROBLEM STATEMENT /DEFINITION	Implement any one machine learning algorithm for classification / clustering task in BIG data Analytics
OBJECTIVE	Select a machine learning algorithm Implement it using Big Data Analytics
S/W PACKAGES AND HARDWARE APPARATUS USED	LINUX OS: FEDORA/UBUNTU PC WITH THE CONFIGURATION AS PENTIUM IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"COLOR MONITOR, KEYBOARD, MOUSE
REFERENCES	Data Mining: Concepts and Techniques by Jiawei Han, MichelineKamber, Jian Pei, Elsevier.
STEPS	Refer to student activity flow chart
INSTRUCTIONS FOR WRITING JOURNAL	TITLE ASSIGNMENT NO PROBLEM STATEMENT OBJECTIVE THEORY SETUP INPUT OUTPUT FAQ REFERENCES

Subject Coordinator	Head of Department
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	Revised On: 14/12/2016
TITLE	Mini Project - social web mining application
PROBLEM STATEMENT /DEFINITION	Design and Implement social web mining application using NoSQL databases, machine learning algorithm, Hadoop and Java/.Net
OBJECTIVE	Select any topic for social web mining application Design the system Implement using NoSQL databases, machine learning algorithm, Hadoop and Java/.Net
S/W PACKAGES AND HARDWARE APPARATUS USED	Linux OS: Fedora/ubuntU PC with the configuration as Pentium IV 1.7 GHz. 4 GB RAM, 320 GB HDD, 15"Color Monitor, Keyboard, Mouse
REFERENCES	Data Mining: Concepts and Techniques by Jiawei Han, MichelineKamber, Jian Pei, Elsevier.
STEPS	Refer to student activity flow chart
INSTRUCTIONS FOR WRITING JOURNAL	TITLE ASSIGNMENT NO PROBLEM STATEMENT OBJECTIVE THEORY SETUP INPUT OUTPUT FAQ REFERENCES

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