PUNE INSTITUTE OF COMPUTER TECHNOLOGY
DHANKAWADI, PUNE – 43.

LAB MANUAL

ACADEMIC YEAR: 2016-2017

DEPARTMENT : INFORMATION TECHNOLOGY **Date : - 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

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Head of Department
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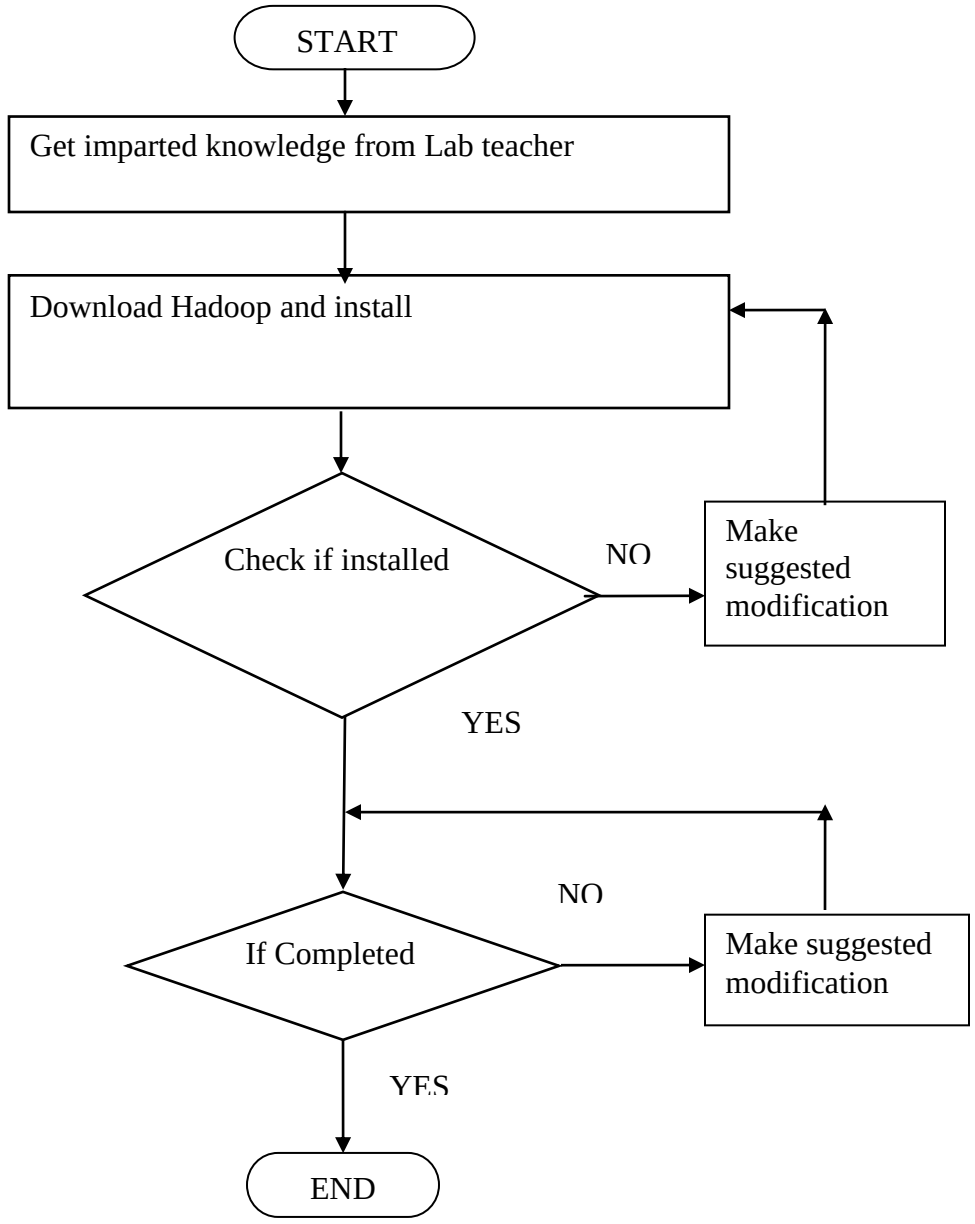
STUDENT ACTIVITY CHART FOR DESIGNING OF NETWORK



TITLE	NoSQL Databases
PROBLEM STATEMENT /DEFINITION	**Study of NoSQL Databases such as Hive/ Hbase/ Cassendra/ DynamoDB**
OBJECTIVE	To learn to install NoSQL databases. To study commands in the selected 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://nosql-database.org/
STEPS	Refer to student activity flow chart
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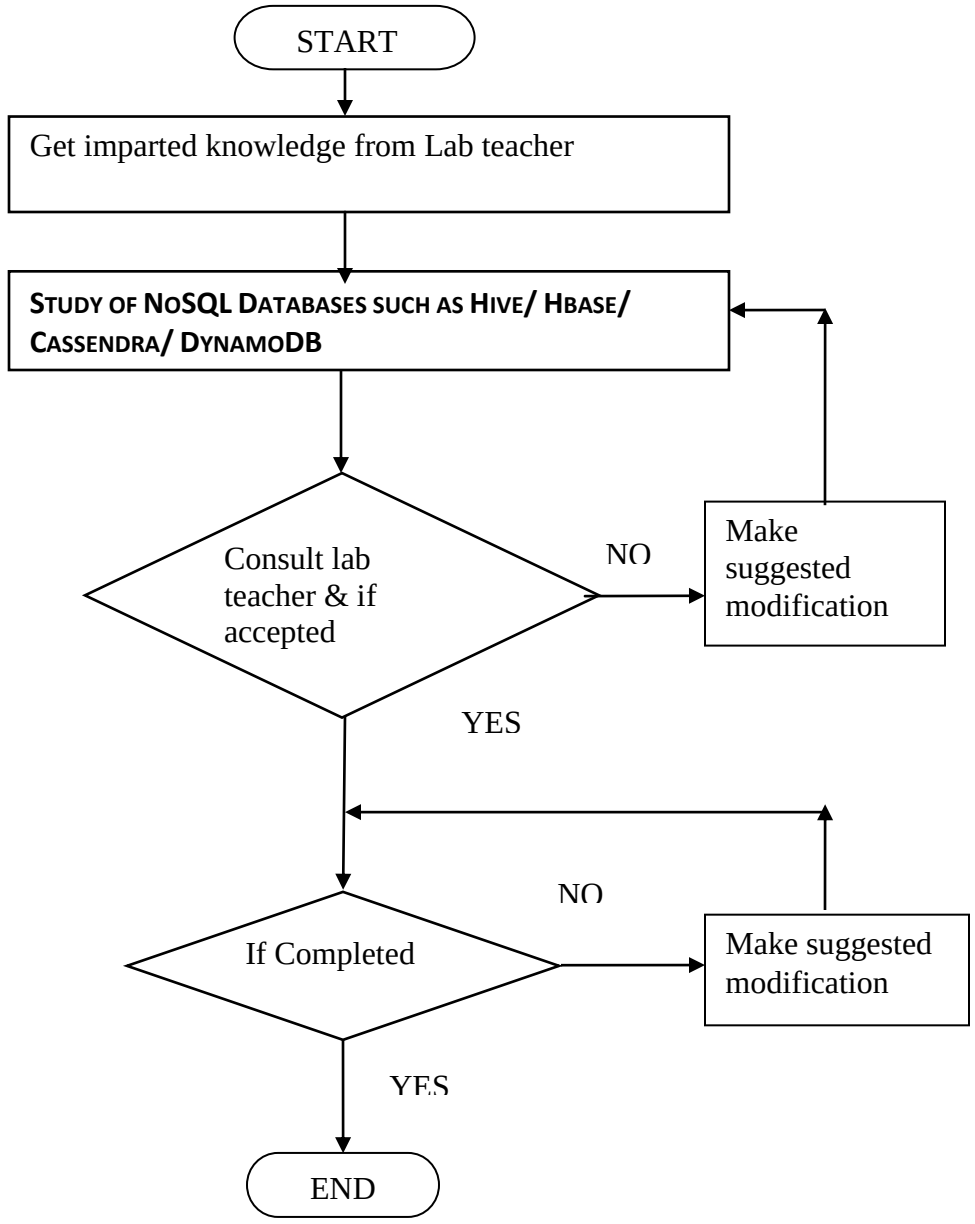
STUDENT ACTIVITY CHART FOR CONFIGURATION OF VOIP



Revised On: 14/12/2016

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
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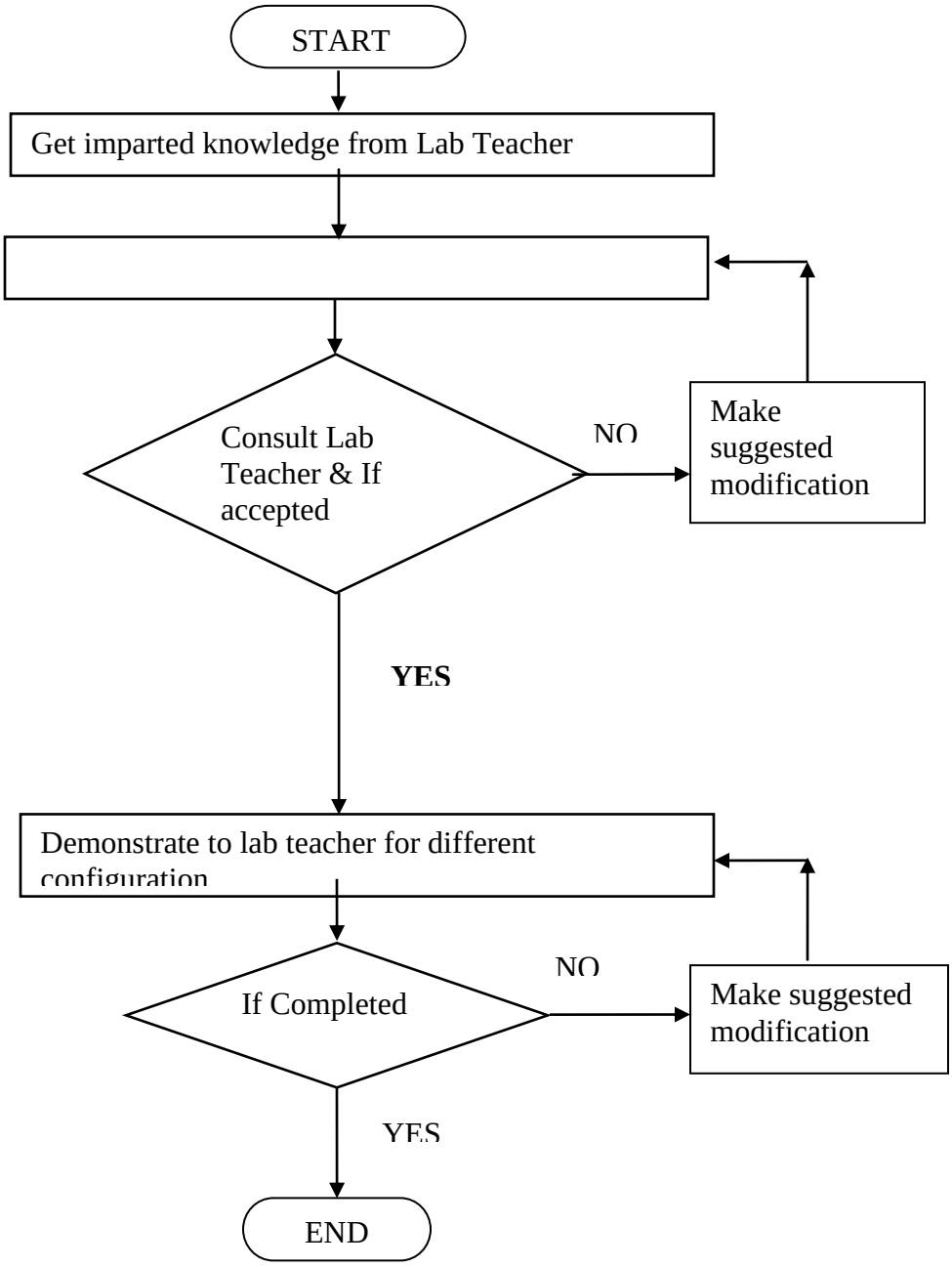
STUDENT ACTIVITY CHART FOR CONFIGURATION OF BORDER GATEWAY PROTOCOL (BGP)



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
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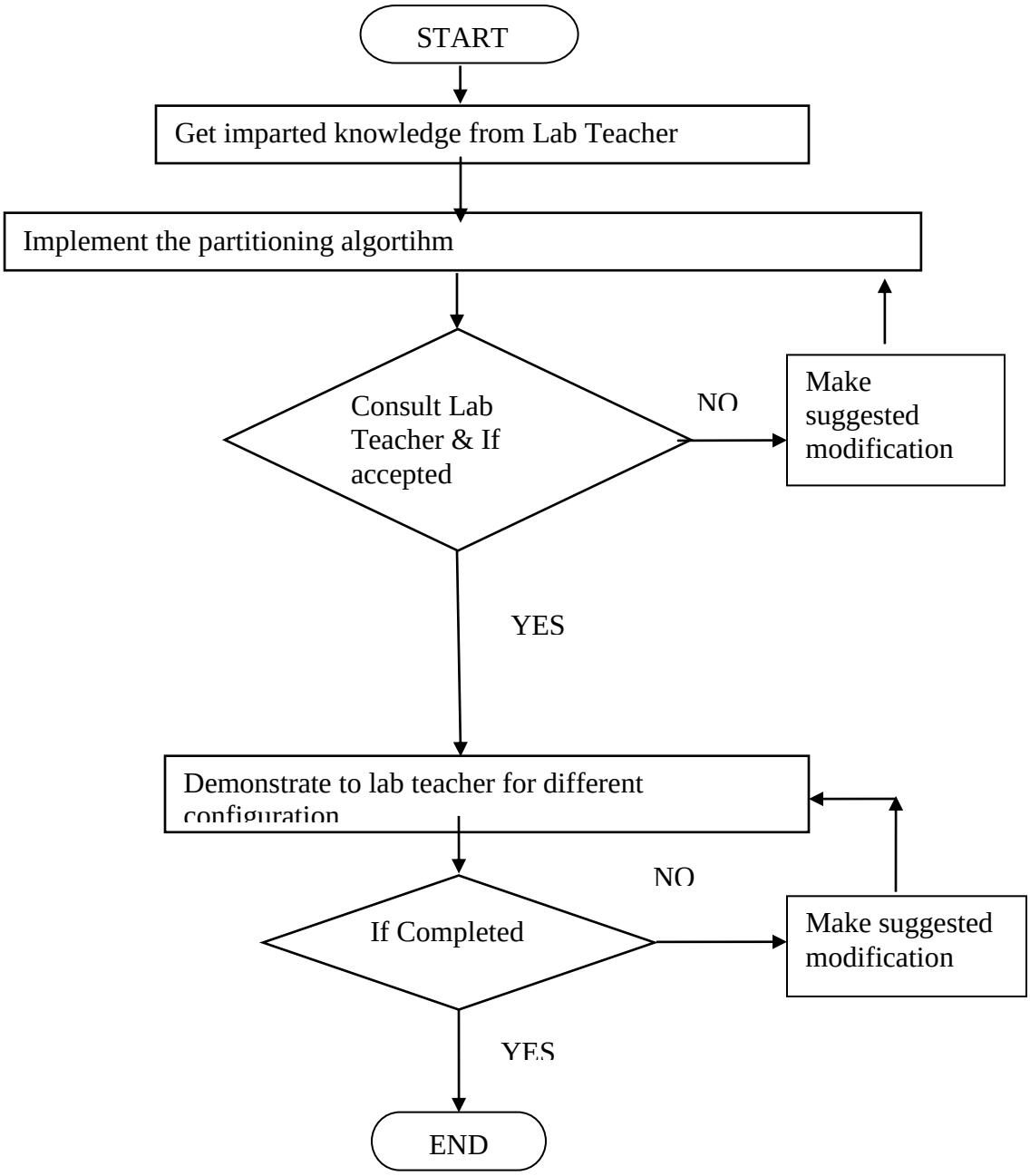
STUDENT ACTIVITY CHART FOR CONFIGURATION OF NETWORK ADDRESS TRANSLATION



TITLE	Distributed Databases
PROBLEM STATEMENT /DEFINITION	**Implement Two Phase commit protocol in Distributed Databases**
OBJECTIVE	To study and implement Two Phase commit protocol in Distributed 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
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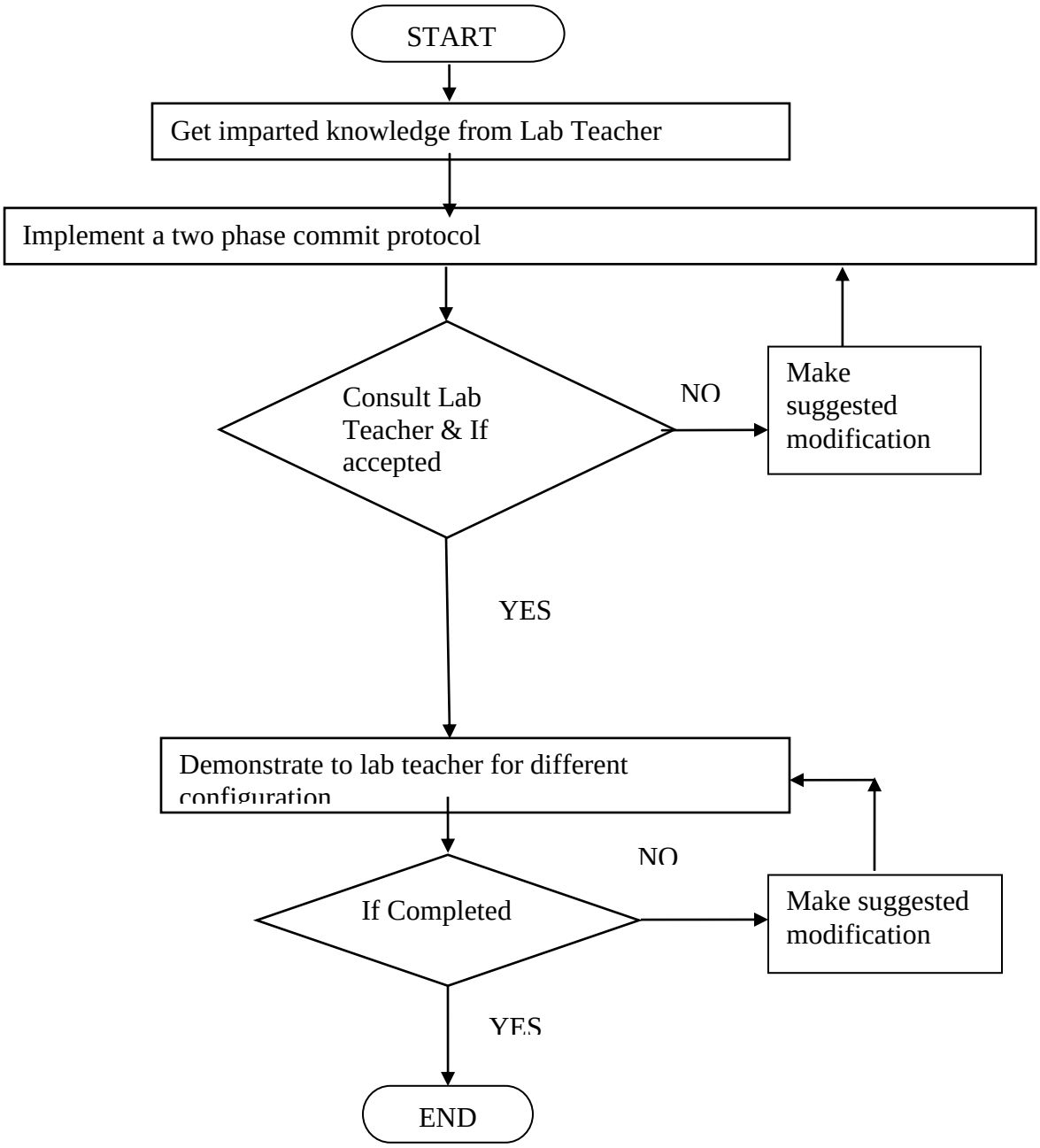
STUDENT ACTIVITY CHART FOR STUDY OF MULTIPROTOCOL LABEL SWITCHING (MPLS)



Revised On: 14/12/2016

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
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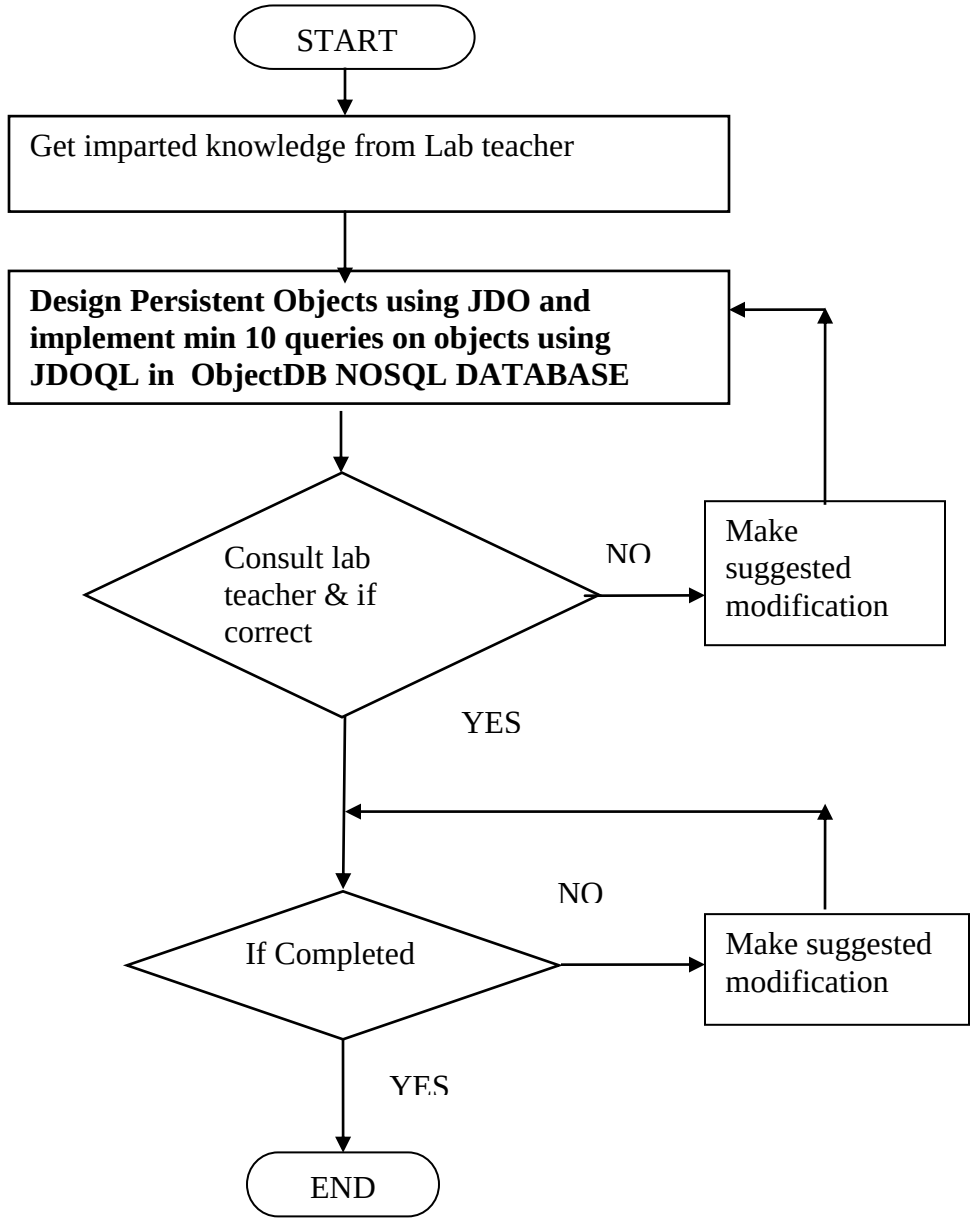
STUDENT ACTIVITY CHART FOR DESIGNING OF NETWORK



Revised On: 14/12/2016

TITLE	XML, XML schemas , DTD
PROBLEM STATEMENT /DEFINITION	**Create XML, XML schemas , DTD for any database application and implement min 10 queries using XQuery FLOWR expression and 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 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
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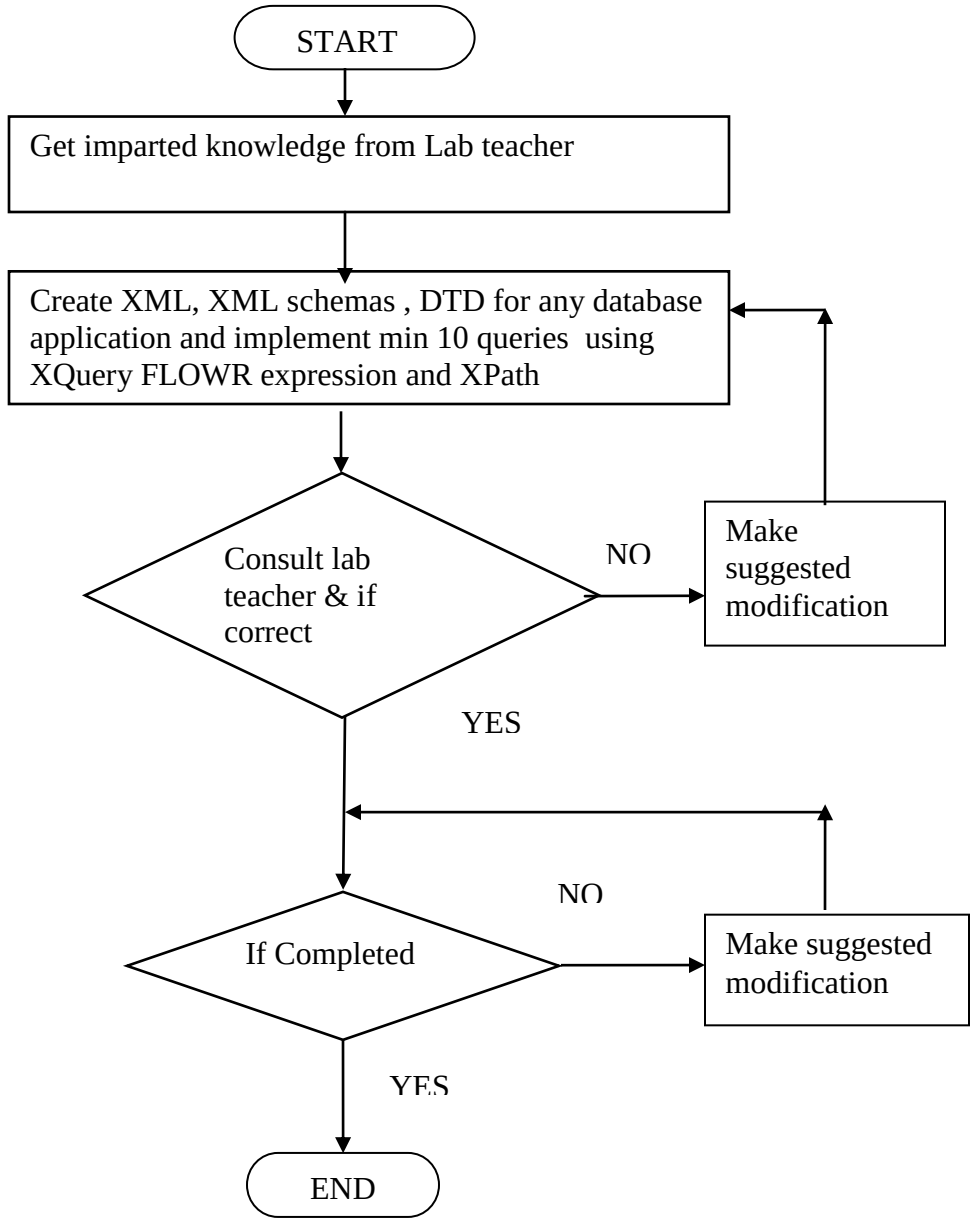
STUDENT ACTIVITY CHART FOR DESIGNING OF NETWORK



Revised On: 14/12/2016

TITLE	**NoSQL database schemas for column based database**
PROBLEM STATEMENT /DEFINITION	**Design database schemas and implement min 10 queries using Hive/ Hbase/ Cassendra column based databases**
OBJECTIVE	To learn query formats of selected database. To implement the queries
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
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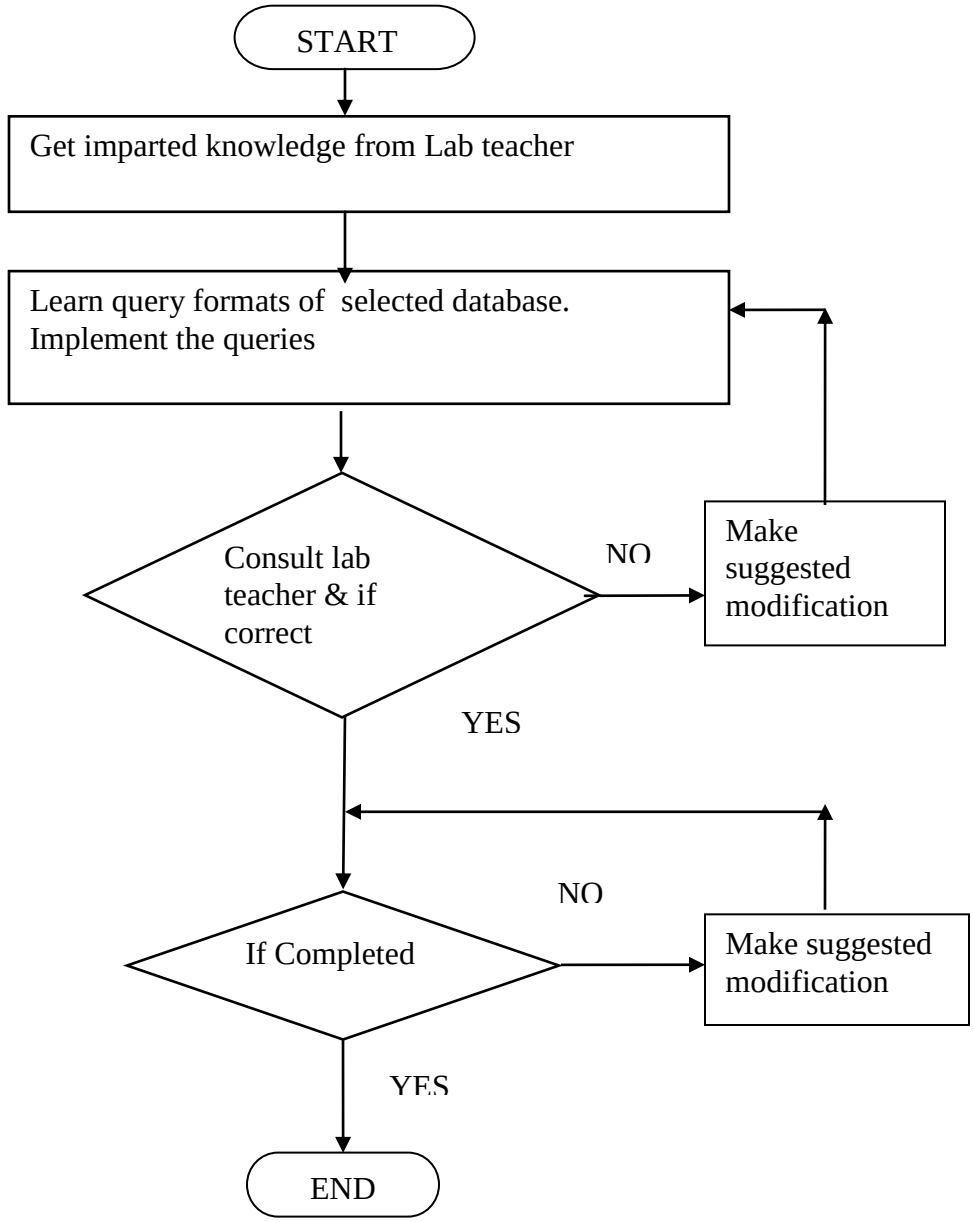

Revised On: 14/12/2016

TITLE	NoSQL database schemas using DynamoDB key Value based databases
PROBLEM STATEMENT /DEFINITION	**Design database schemas and implement min 10 queries using DynamoDB key Value based databases**
OBJECTIVE	To learn query formats of DynamoDB To implement the queries
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
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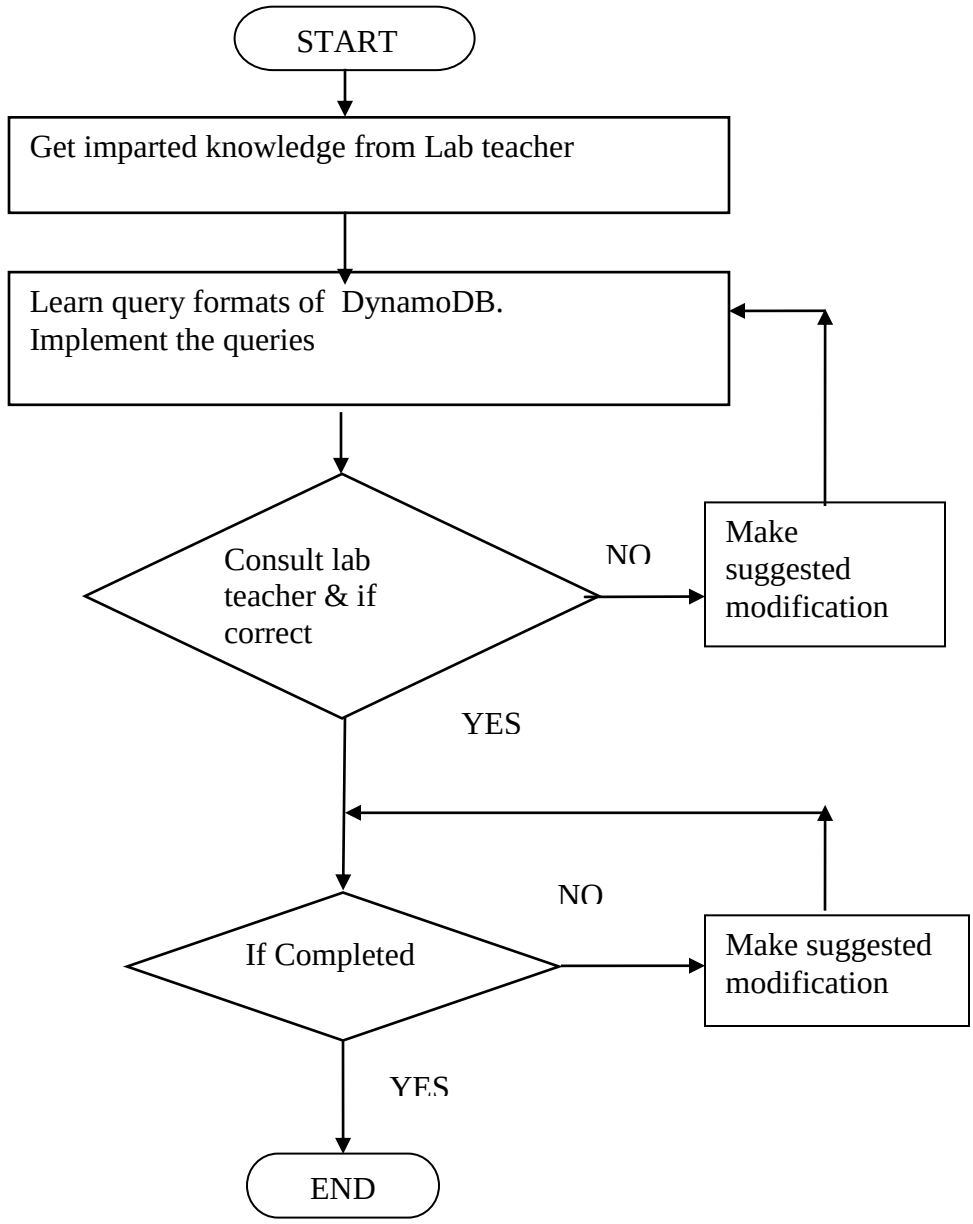

Revised On: 14/12/2016

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
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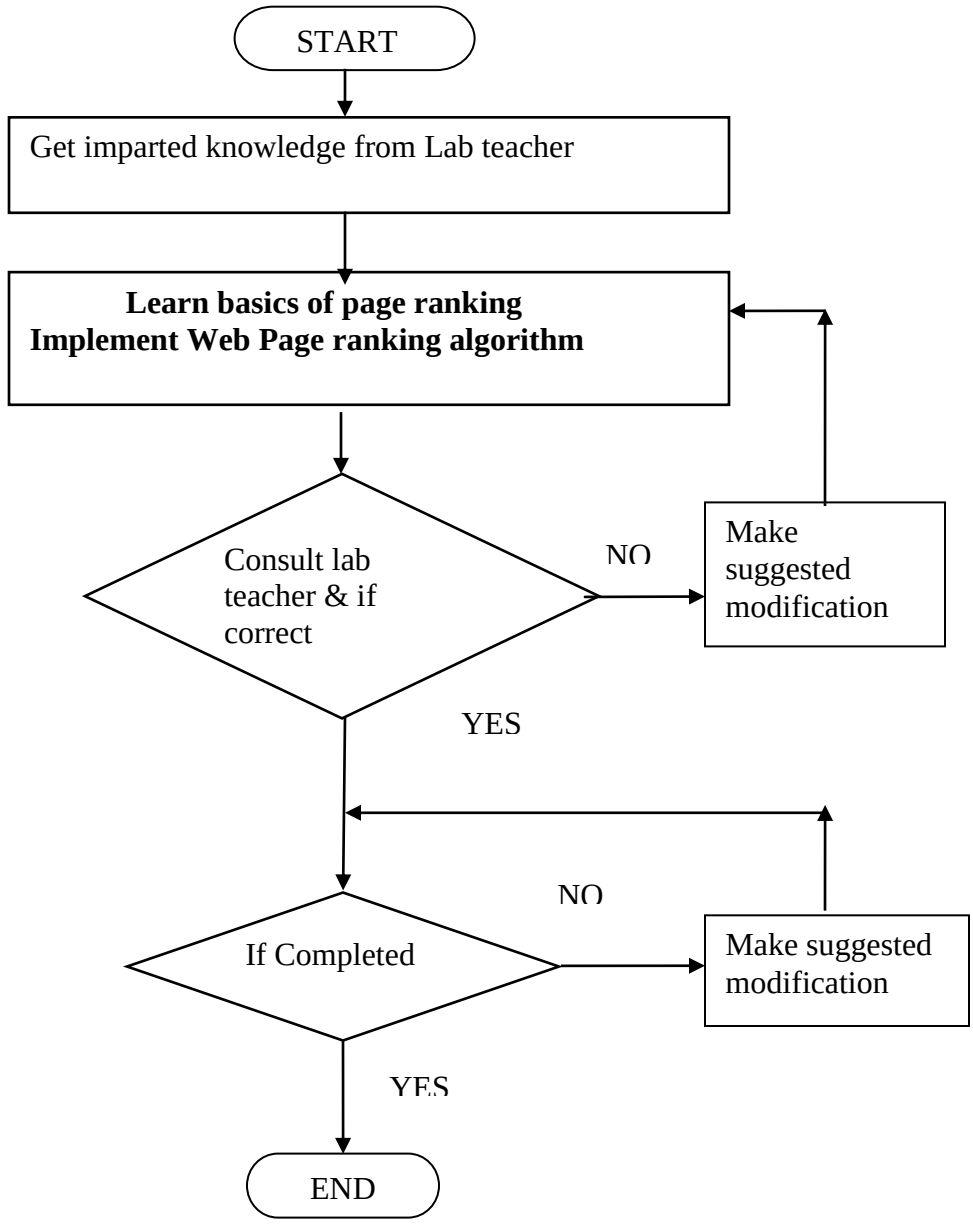

Revised On: 14/12/2016

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
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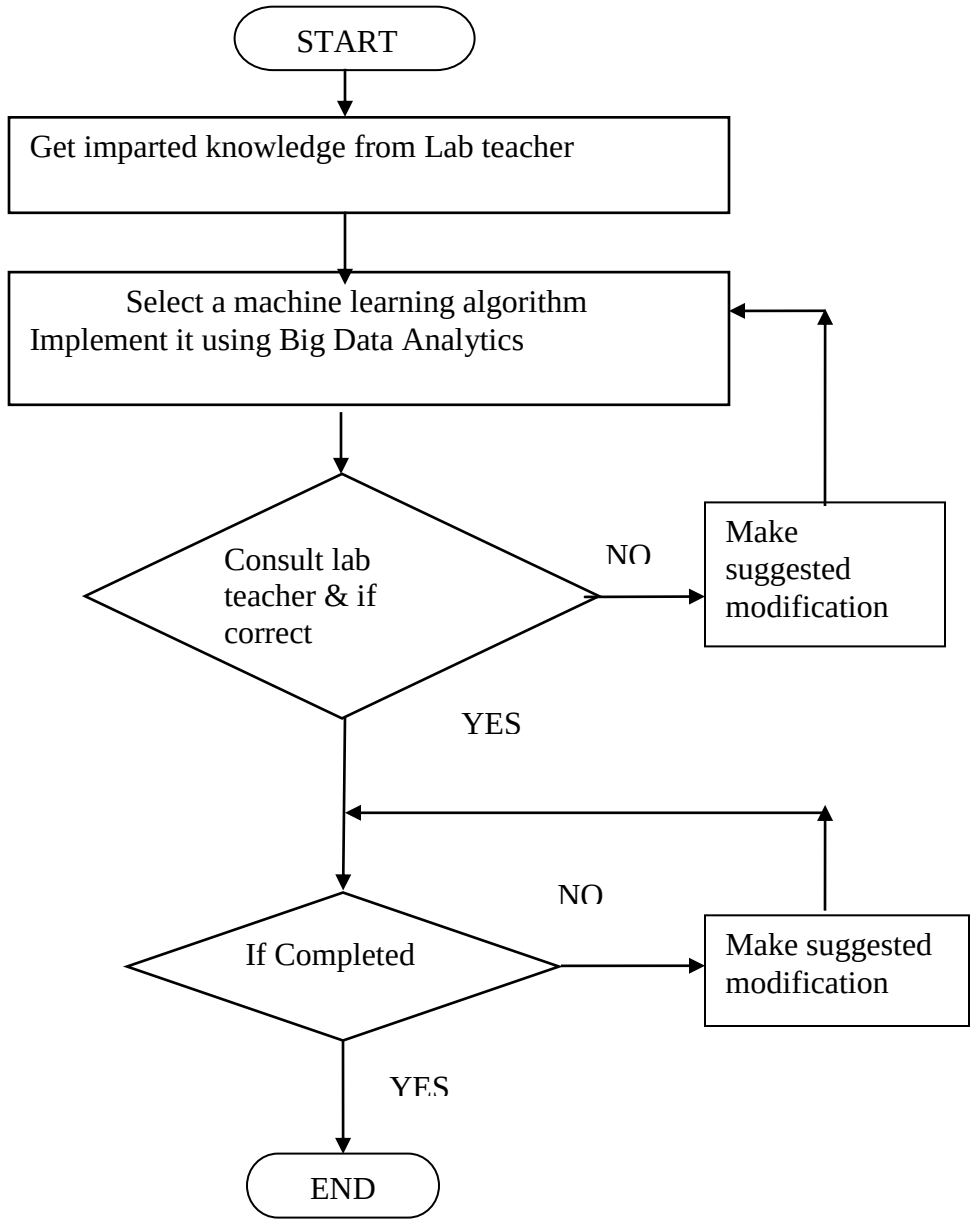

Revised On: 14/12/2016

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
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STUDENT ACTIVITY CHART FOR DESIGNING OF NETWORK