CREATE TABLE Table\_Metadata (

TableName VARCHAR (255),

PrimaryKeyIndex VARCHAR (255),

SecondaryKeyIndex VARCHAR (255),

ClusteringIndex VARCHAR (255),

AvrgRowLength INT,

TableSize INT,

NumberOfRecords INT,

NumberOfBlocks INT,

BlockingFactor INT

);

CREATE TABLE Index\_Metadata (

FieldName VARCHAR (255),

TableName VARCHAR (255),

TypeOfIndex VARCHAR (255),

StructureOfIndex VARCHAR (255),

Unique VARCHAR (255),

HeightOfTree INT,

DistinctValues INT

);

CREATE TABLE Attribute\_Metadata (

TableName VARCHAR (255),

AttributeName VARCHAR (255),

DataType VARCHAR (255),

KeyType VARCHAR (255),

Unique VARCHAR (255),

Sorted VARCHAR (255),

TypeOfIndex VARCHAR (255),

DistinctValues INT,

Nullable VARCHAR (255)

);

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Creating indexes:

CREATE UNIQUE INDEX primary\_idx\_DCode ON dept (DCode ASC);

CREATE INDEX secondary\_idx\_DName ON dept (DName);

CREATE UNIQUE INDEX primary\_idx\_CCode ON Course (CCode ASC);

CREATE INDEX secondary\_idx\_CoName ON Course (CoName);

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INSERT INTO Table\_Metadata VALUES ('Dept','DCode','DName','null',20,50,36,14,10);

INSERT INTO Table\_Metadata VALUES (‘Course’,’ CCode’,’ ’DeptDName’,’null’,15,50, 60,20,10);

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INSERT INTO Index\_Metadata VALUES ('DCode', 'dept', 'PI', 'B+ tree', 'unique', 40, 36);

INSERT INTO Index\_Metadata VALUES (‘DName’,’dept’,’SI’,’B+ tree’,’unique’,40,36);

INSERT INTO Index\_Metadata VALUES (‘CCode’,’Course’,’PI’,’B+ tee’,’unique’,40,60);

INSERT INTO Index\_Metadata VALUES (‘CoName,’Course’,’SI’,’B+ tree’,’unique’,40,60);

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INSERT INTO Attribute\_Metadata VALUES('dept','Dcode','INT','PK','unique','yes','PI',36,'not null');

INSERT INTO Attribute\_Metadata VALUES('dept','DName','VARCHAR','PK','unique','no','SI',36,'not null');

INSERT INTO Attribute\_Metadata VALUES('dept','DOffice','VARCHAR','null','no','no','null',30,'null');

INSERT INTO Attribute\_Metadata VALUES('dept','DPhone','VARCHAR','null','no','no','null',30,'null');

INSERT INTO Attribute\_Metadata VALUES('dept','DstarDate','Date','null','no','no','null',30,'not null');

INSERT INTO Attribute\_Metadata VALUES('dept','CollegeCName','VARCHAR','FK','no','no','null',30,'not null');

INSERT INTO Attribute\_Metadata VALUES('dept','InstructorId','INT','FK','no','no','null',30,'not null');

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INSERT INTO Attribute\_Metadata VALUES('Course','CCourse','INT','PK','unique','yes','PI','60','not null');

INSERT INTO Attribute\_Metadata VALUES('Course','CoName','VARCHAR', 'PK','unique','no','PI','60','not null');

INSERT INTO Attribute\_Metadata VALUES('Course','Credits','INT','null','no','no','null',6,'null');

INSERT INTO Attribute\_Metadata VALUES('Course','Level','INT','null','no','no','null',4,'null');

INSERT INTO Attribute\_Metadata VALUES('Course','CDesc','VARCHAR','null','no','no','null',60,'null');

INSERT INTO Attribute\_Metadata VALUES('Course','DeptDName','VARCHAR','FK','unique','no','null', 36,'not null');

INSERT INTO Attribute\_Metadata VALUES('Course','DeptDCode','INT','FK','unique','no','null', 36,'not null');

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Altering some tables and rows:

ALTER TABLE Attribute\_Metadata ADD COLUMN maxiValue INT;

ALTER TABLE Attribute\_Metadata ADD COLUMN minValue INT;

ALTER TABLE index\_metadata ADD COLUMN firstLevelIndex INT;

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UPDATE Attribute\_Metadata SET maxiValue = 600 WHERE (TableName, AttributeName) = ('dept', 'Dcode') LIMIT 1;

UPDATE Attribute\_Metadata SET minValue = 100 WHERE (TableName, AttributeName) = ('dept', 'Dcode') LIMIT 1;

UPDATE Attribute\_Metadata SET AttributeName ='CCode' WHERE (TableName, AttributeName) = ('Course', 'CCourse') LIMIT 1;

UPDATE Attribute\_Metadata SET minValue = 119 WHERE (TableName, AttributeName) = ('Course', 'CCode') LIMIT 1;

UPDATE Attribute\_Metadata SET maxiValue = 455 WHERE (TableName, AttributeName) = ('Course', 'CCode') LIMIT 1;

UPDATE Attribute\_Metadata SET minValue = 3 WHERE (TableName, AttributeName) = ('Course', 'Credits') LIMIT 1;

UPDATE Attribute\_Metadata SET maxiValue = 3 WHERE (TableName, AttributeName) = ('Course', 'Credits') LIMIT 1;

UPDATE Attribute\_Metadata SET minValue = 1 WHERE (TableName, AttributeName) = ('Course', 'Level') LIMIT 1;

UPDATE Attribute\_Metadata SET maxiValue = 4 WHERE (TableName, AttributeName) = ('Course', 'Level') LIMIT 1;

UPDATE Attribute\_Metadata SET minValue = 100 WHERE (TableName, AttributeName) = ('Course', 'DeptDCode') LIMIT 1;

UPDATE Attribute\_Metadata SET maxiValue = 500 WHERE (TableName, AttributeName) = ('Course', 'DeptDCode') LIMIT 1;

UPDATE Attribute\_Metadata SET minValue = 1 WHERE (TableName, AttributeName) = ('dept', 'InstructorId') LIMIT 1;

UPDATE Attribute\_Metadata SET maxiValue = 5 WHERE (TableName, AttributeName) = ('dept', 'InstructorId') LIMIT 1;

UPDATE Attribute\_Metadata SET TableName = 'Dept' WHERE (TableName) = ('dept') LIMIT 7;

UPDATE Attribute\_Metadata SET AttributeName = 'DCode' WHERE (TableName,AttributeName) = ('dept','Dcode') LIMIT 1;

UPDATE index\_metadata SET TableName = 'Dept' WHERE (TableName) = ('dept') LIMIT 2;

UPDATE index\_metadata SET firstLevelIndex=4 LIMIT 4;

UPDATE table\_metadata

SET AvrgRowLength=3276,TableSize=196560,NumberofBlocks=48,BlockingFactor=2

WHERE TableName='Course';

UPDATE table\_metadata

SET AvrgRowLength=2730,TableSize=98280,NumberofBlocks=24,BlockingFactor=2

WHERE TableName='dept';

UPDATE index\_metadata

SET HeightOfTree=7

WHERE TableName='dept';

UPDATE index\_metadata

SET HeightOfTree=8

WHERE TableName='course';