



*Mini project report on*

**Bank Branch Management Database**

*Submitted in partial fulfilment of the requirements for the award of degree of*

**Bachelor of Technology**

**in**

**Computer Science & Engineering**

**UE20CS301 – DBMS Project**

*Submitted by:*

**Vaishnavi R Bhat**

**PES2UG20CS922**

Under the guidance of

**Prof. Nivedita Kasturi**

Assistant Professor

Designation

PES University

**AUG - DEC 2022**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**FACULTY OF ENGINEERING**

**PES UNIVERSITY**

(Established under Karnataka Act No. 16 of 2013)

Electronic City, Hosur Road, Bengaluru – 560 100, Karnataka, India



# PES UNIVERSITY

(Established under Karnataka Act No. 16 of 2013)

Electronic City, Hosur Road, Bengaluru – 560 100, Karnataka, India

## CERTIFICATE

*This is to certify that the mini project entitled*

### **Bank Branch Database Management**

*is a bonafide work carried out by*

**Vaishnavi R Bhat**

**PES2UG20CS922**

In partial fulfilment for the completion of fifth semester DBMS Project (UE20CSS301) in the Program of Study -Bachelor of Technology in Computer Science and Engineering under rules and regulations of PES University, Bengaluru during the period AUG. 2022 – DEC. 2022. It is certified that all corrections / suggestions indicated for internal assessment have been incorporated in the report. The project has been approved as it satisfies the 5<sup>th</sup> semester academic requirements in respect of project work.

Signature

Prof. Nivedita Kasturi

Assistant Professor

## **DECLARATION**

We hereby declare that the DBMS Project entitled **Detection of Natural Disasters using machine learning and computer vision by augmenting the need of sensors** has been carried out by us under the guidance of **Prof. Nivedita Kasturi, Assistant Professor** and submitted in partial fulfilment of the course requirements for the award of degree of **Bachelor of Technology in Computer Science and Engineering** of **PES University, Bengaluru** during the academic semester AUG – DEC 2022.

**Vaishnavi R Bhat**

**PES2UG20CS922**

## **ACKNOWLEDGEMENT**

I would like to express my gratitude to Prof. Nivedita Kasturi, Department of Computer Science and Engineering, PES University, for her continuous guidance, assistance, and encouragement throughout the development of this UE20CS301 - DBMS Project.

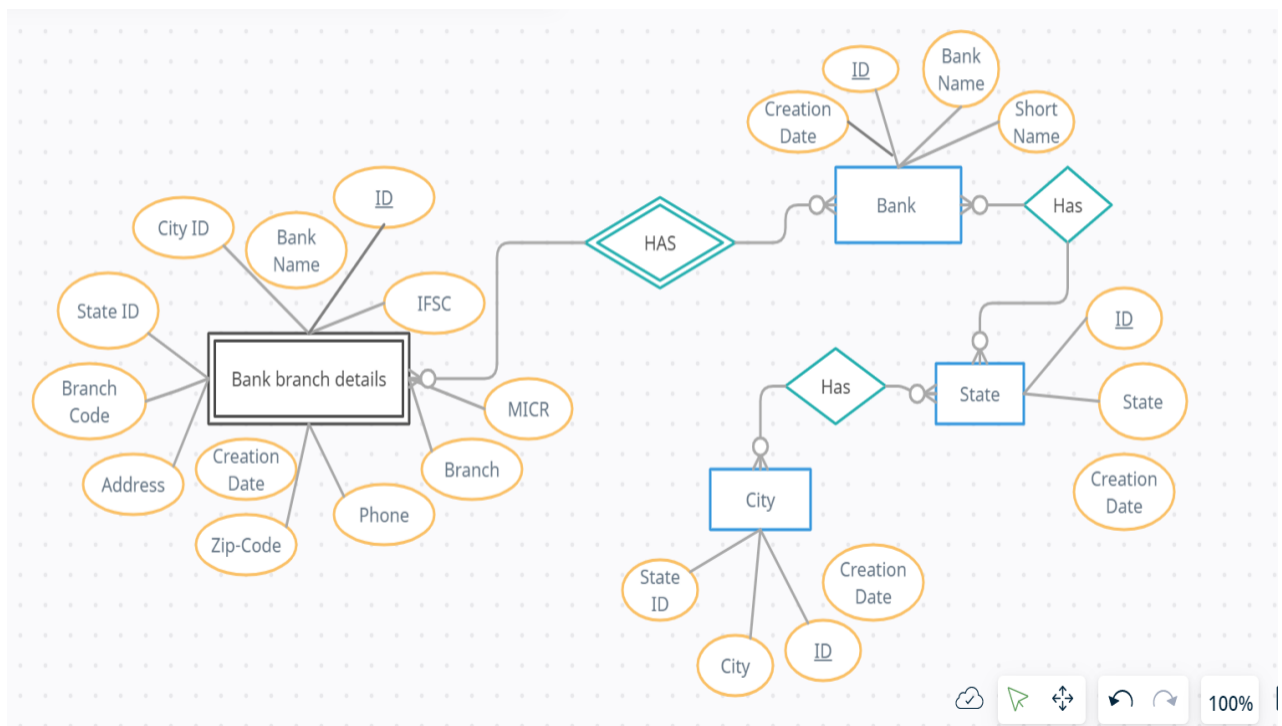
I take this opportunity to thank Dr. Sandesh B J, C, Professor, Chair Person, Department of Computer Science and Engineering, PES University, for all the knowledge and support I have received from the department.

I am deeply grateful to Dr. M. R. Doreswamy, Chancellor, PES University, Prof. Jawahar Doreswamy, Pro Chancellor – PES University, Dr. Suryaprasad J, Vice-Chancellor, PES University for providing to me various opportunities and enlightenment every step of the way. Finally, this DBMS Project could not have been completed without the continual support and encouragement I have received from my family and friends.

## ABSTRACT:

Bank Branch management system can be used by users, admins and bank locators and managers to keep track of the various branches of different banks in this country. There are a lot of bank branches which are getting re-infrastructured , relocated to other places , getting shut down and many openings are being done as well. This database can be used in managing all of them.

## ER DIAGRAM:



## TABLES:

- Table containing bank details: `tblbank`

	ID	BankName	ShortName	CreationDate
▶	1	Punjab National Bank	PNB	2021-09-18 14:11:32
	2	State Bank of India	SBI	2021-09-18 14:17:01
	3	Bank of Baroda	BOB	2021-09-18 14:17:22
	4	Canara Bank of India	CBI	2021-09-18 14:17:58
	5	Bank of India	BOI	2021-09-18 14:18:20
	7	ICICI	ICICI	2021-09-21 22:34:38

- Table containing bank branch details: `tblbankdetail`

	ID	IFSCCode	MICRCode	BankName	Address	StateID	CityID	Branch	PhoneNumber
▶	1	PUNB12456	PUNB12456	1	hkhrehkh4t3a	5	2	kghghkhghkj	9789789798
	2	BARBOMERDEL	250012007	3	Vikash Plaza, Sri Ram Palace, Near Naveen Man...	5	2	Delhi Road Br Meerut U P	1800223344
	3	BARBOMEEGAR	250012009	3	Bank Of Baroda, 75-1, Mangal Pandey, Nagar G...	5	2	Garh Road Meerut Up	0
	4	BARBODBMCTY	250012013	3	449 Budhana Gate Opp Ismailgirls Degree Colle...	5	2	Meerut City	1800223344
	5	SBIN000391	NA	2	PB NO 6 Bhopal Bairagarh Bhopal MP 462031	6	3	3 EME Centre bhopal	1457896541

StateID	CityID	Branch	PhoneNumber	BranchCode	ZipCode	CreationDate
5	2	kghghkhghkj	9789789798	hjkj900	123456	2021-09-19 11:09:55
5	2	Delhi Road Br Meerut U P	1800223344	MERDEL	250	2021-09-19 11:14:24
5	2	Garh Road Meerut Up	0	MEEGAR	250002	2021-09-19 11:16:35
5	2	Meerut City	1800223344	DBMCTY	250002	2021-09-19 11:20:14
6	3	3 EME Centre bhopal	1457896541	000391	462031	2021-09-19 11:25:15

- Table containing State and its details: `tblstate`

	ID	State	CreationDate
▶	5	Uttar Pradesh	2021-09-19 11:01:19
	6	Madya Pradesh	2021-09-17 11:49:08
	7	Kerala	2021-09-15 10:34:09
	8	Tamilnadu	2021-09-15 10:34:19
	9	West Bangal	2021-09-15 10:34:34
	10	Punjab	2021-09-15 10:34:41

- Table containing City and its details: `tblcity`

	ID	StateID	City	CreationDate
▶	1	0	Varanasi	2021-09-17 12:05:47
	2	5	Meerut	2021-09-17 12:01:04
	3	6	Bhopal	2021-09-17 12:01:25
	4	12	Patna	2021-09-17 12:01:40
	6	5	Varanasi	2021-09-17 11:52:46
	7	10	Amristsar	2021-09-17 11:53:02

## QUERIES:

### 1. Nested query

```
14  -- Nested query
15  -- INTERSECT operation
16  • SELECT tblbank.CreationDate, tblbank.BankName
17  FROM tblbank
18  WHERE Date(CreationDate) IN (SELECT Date(CreationDate) FROM tblcity);
19
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
CreationDate	BankName		
2021-09-21 22:34:38	ICICI		

### 2. Correlated query

```
20  -- Correlated query
21  -- Gives output only if there are tuples with the specified date
22  • SELECT IFSCCode, MICRCode, branch FROM tblbankdetail
23  WHERE EXISTS (SELECT * FROM tblbank WHERE Date(CreationDate) = '2021-09-18');
24
25  -- Set operations
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
IFSCCode	MICRCode	branch	
PUNB12456	PUNB12456	kjhkhkhkhkj	
BARBOMERDEL	250012007	Delhi Road Br Meerut U P	
BARBOMEEGAR	250012009	Garh Road Meerut Up	
BARB0DBMCTY	250012013	Meerut City	
SBIN000391	NA	3 EME Centre bhopal	

### 3. Two queries for SET operation

Union , Union All and Intersect Operation.

```
25  -- Set operations
26  • SELECT CreationDate, ShortName FROM tblbank
27  UNION
28  SELECT CreationDate, City FROM tblcity;
29
```

Result Grid	Filter Rows:	Export:	Wrap Cell Conte
CreationDate	ShortName		
2021-09-18 14:11:32	PNB		
2021-09-18 14:17:01	SBI		
2021-09-18 14:17:22	BOB		
2021-09-18 14:17:58	CBI		
2021-09-18 14:18:20	BOI		
2021-09-21 22:34:38	ICICI		



```

30 • SELECT CreationDate FROM tblbank
31 UNION ALL
32 SELECT CreationDate FROM tblcity;
33

```

CreationDate
2021-09-18 14:11:32
2021-09-18 14:17:01
2021-09-18 14:17:22
2021-09-18 14:17:58
2021-09-18 14:18:20
2021-09-21 22:34:38

Result 6 x

```

15 -- INTERSECT operation
16 • SELECT tblbank.CreationDate, tblbank.BankName
17 FROM tblbank
18 WHERE Date(CreationDate) IN (SELECT Date(CreationDate) FROM tblcity);
19

```

CreationDate	BankName
2021-09-21 22:34:38	ICICI

#### 4. Two queries for Aggregate functions

Counts the number of branches of a particular Bank.

```

39 -- Aggregate Function
40 • SELECT BankName, COUNT(*)
41 FROM tblbankdetail
42 GROUP BY BankName;
43

```

BankName	COUNT(*)
1	1
3	3
2	1
7	1

Selects the Bank ID that has branches more than 2

```

44 • SELECT BankName, COUNT(*)
45 FROM tblbankdetail
46 GROUP BY BankName
47 HAVING COUNT(*) > 2 ;

```

BankName	COUNT(*)
3	3

## 5. Two queries with Order By clause

Displays the output in the ascending alphabetical order of City

```

49 -- Order by clause
50 • SELECT StateID, City FROM tblcity
51 ORDER BY City;
52

```

StateID	City
10	Amristsar
13	Bangalore
6	Bhopal
5	Meerut
12	Patna
8	Vareansi

tblcity 13 x

Displays the output in the descending order of State ID

```

53 • SELECT StateID, City FROM tblcity
54 ORDER BY StateID DESC;
55
56 -- Query for Search
57 • SELECT tblbank.BankName as bn,

```

StateID	City
13	Bangalore
12	Patna
10	Amristsar
6	Bhopal
5	Meerut
8	Vareansi

tblcity 12 x

## 6. Function or Stored Procedure

```

53      -- Functions
54      -- Using inbuilt function cast
55      -- Splitting Date and Time
56 •    SELECT cast(CreationDate AS date),cast(CreationDate AS Time) FROM tblbank;

```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	cast(CreationDate AS date)	cast(CreationDate AS Time)			
▶	2021-09-18	14:11:32			
	2021-09-18	14:17:01			
	2021-09-18	14:17:22			
	2021-09-18	14:17:58			
	2021-09-18	14:18:20			

Result 14 x

### Creating a Function:

isValid() tells if the ID in the input is a valid ID for the state. The valid ID ranges from 1 to 28 because there can be no more than 28 states in India.

```

-- Creating a Function
DELIMITER $$
• CREATE FUNCTION isValid(
  stateID INTEGER )
  RETURNS VARCHAR(20)
  DETERMINISTIC
  BEGIN
  IF stateID > 28 THEN
    RETURN ("invalid");
  ELSE
    RETURN ("valid");
  END IF;
  END
  $$

```

```

73 • SELECT isValid(30);
74   SELECT isValid(5);

```

Result Grid			Filter Rows:	Export:
	isValid(5)			
▶	valid			

72	
73	• <code>SELECT isValid(30);</code>
74	<code>SELECT isValid(5);</code>

Result Grid			Filter Rows:	<input type="text"/>	Export:	
	isValid(30)					
▶	invalid					

## 7. Trigger

```
-- Trigger
DELIMITER $$
CREATE TRIGGER StateValidity
  AFTER UPDATE ON tblstate
  FOR EACH ROW
  BEGIN
    DECLARE error_msg VARCHAR(255);
    SET error_msg = ('Cannot have more than 28 states!');
    IF new.tblstate.ID > 28 THEN
      SIGNAL SQLSTATE '45000'
      SET MESSAGE_TEXT = error_msg;
    END IF;
  END IF;
END $$
```

0 row(s) affected

Error Code: 1644. Cannot have more than 28 states!

## FRONTEND:

**Query:** A search box is implemented. This is used to search and find the details of a particular branch.

There is a choice of giving any bank name, branch name or zip-code to search and get details for.

## BANK BRANCH DATABASE MANAGEMENT

# Search Bank Detail

```
-- Query for Search
SELECT tblbank.BankName as bn,
       tblbank.ID as bid, tblbank.ShortName, tblstate.State,
       tblcity.ID as cid, tblcity.StateID, tblcity.City,
       tblbankdetail.IFSCCode, tblbankdetail.StateID,
       tblbankdetail.ID as bdid, tblbankdetail.CityID,
       tblbankdetail.BankName, tblbankdetail.MICRCode,
       tblbankdetail.BankName, tblbankdetail.Address,
       tblbankdetail.Branch, tblbankdetail.PhoneNumber,
       tblbankdetail.BranchCode, tblbankdetail.ZipCode, tblbankdetail.CreationDate
from tblbankdetail inner join tblstate
on tblbankdetail.StateID=tblstate.ID join tblcity
on tblbankdetail.CityID=tblcity.ID join tblbank
on tblbankdetail.BankName=tblbank.ID
where (tblbank.BankName like '%$data%' || tblbankdetail.ZipCode like '%$data%' || tblbankdetail.Branch like '%$data%');
```

Search for a bank name:



BANK BRANCH DATABASE MANAGEMENT

Search Bank Detail

Bank of baroda

SEARCH

BANK BRANCH MANAGEMENT DATABASE

Result of "Bank of baroda" Bank Detail

S.No.	Bank Name	State	City	Branch	IFSC Code	MICR Code	Address	Zip Code	Contact Number
1	Bank of Baroda (BOB)	Uttar Pradesh	Meerut	Delhi Road Br Meerut U P	BARBOMERDEL	250012007	Vikash Plaza, Sri Ram Palace, Near Naveen Mandi, Delhi Road, Meerut, Uttar Pradesh-	250	1800223344

# Search Bank Detail

123456

SEARCH

## Result of "123456" Bank Detail

S.No.	Bank Name	State	City	Branch	IFSC Code	MICR Code	Address	Zip Code	Contact Number
1	Punjab National Bank (PNB)	Uttar Pradesh	Meerut	kjhkhkhkhkhkh	PUNB12456	PUNB12456	hkjhrehkrkh4t3a	123456	9789789798

Search for Branch name:

BANK BRANCH DATABASE MANAGEMENT

Search Bank  
Detail

ICICI Bangalore

SEARCH

Result of "ICICI Bangalore" Bank Detail

S.No.	Bank Name	State	City	Branch	IFSC Code	MICR Code	Address	Zip Code	Contact Number
1	ICICI (ICICI)	Karnataka	Bangalore	ICICI Bangalore	ICICI000123	NA	ABC Street	500015	1236547896