DBMS PROJECT

NGO DATABASE MANAGEMENT

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ABOUT PROJECT

This project evaluated the database management system of NGOs that are spread all over India. And in this project we have discussed about how the management of this whole system could be carried out.

Further in this project we will discuss about:

1. Different types of NGOs and their branches spread all over.
2. The volunteers and managers.
3. Information about the programs, activities conducted in these NGO's.
4. Donors and Trustees attached to the NGOs.
5. Job vacancy available for applying.

Means overall this project is based on Management of the whole NGO system not just one particular NGO.

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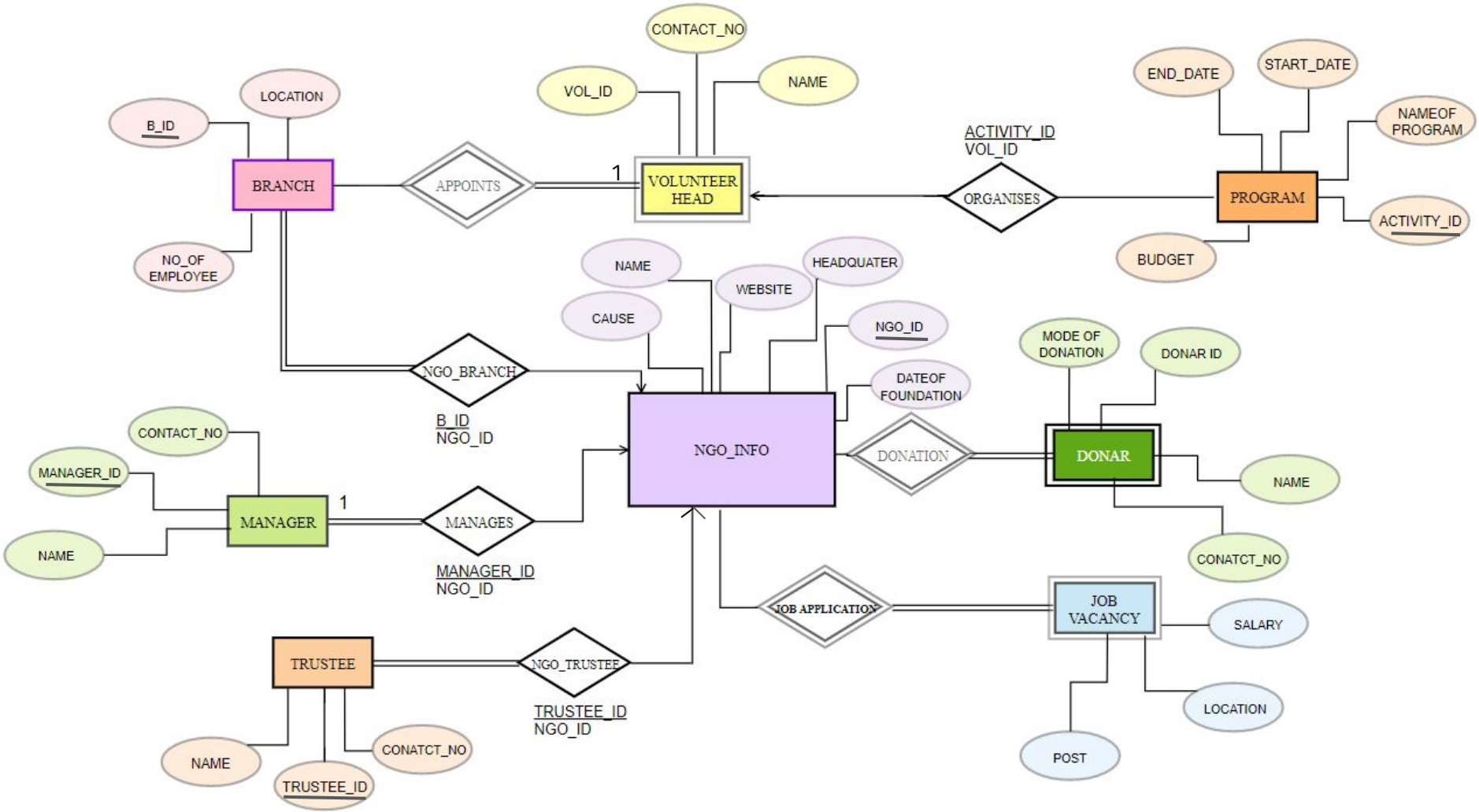
ER DIAGRAM AND SCHEMA


CONTACT_NO
VOL_ID
NAME
LOCATION
B_ID
BRANCH
APPOINTS
1
VOLUNTEER HEAD
ACTIVITY_ID
VOL_ID
ORGANISES
END_DATE
START_DATE
NAMEOF PROGRAM
PROGRAM
ACTIVITY_ID
BUDGET
NO_OF EMPLOYEE
NAME
HEADQUATER
WEBSITE
CAUSE
NGO_ID
NGO_BRANCH
B_ID
NGO_ID
MODE OF DONATION
DONAR ID
DATEOF FOUNDATION
NGO_INFO
DONATION
DONAR
NAME
CONTACT_NO
MANAGER_ID
MANAGER
1
MANAGES
NAME
CONATCT_NO
MANAGER_ID
NGO_ID
JOB APPLICATION
JOB VACANCY
SALARY
TRUSTEE
NGO_TRUSTEE
LOCATION
NAME
CONATCT_NO
TRUSTEE_ID
TRUSTEE_ID
NGO_ID
POST

DATABASE SCHEMA OF NGO

1. ***NGOINFO*** (ngo_id, name, foundation, cause, headquarter, website)
2. ***MANAGER*** (manager_id, name, contact_no, mail)
3. ***BRANCHES*** (b_id , location, no_of_employees)
4. ***VOLUNTEERHEAD*** (b_id, vol_id, vol_head_name, contact_no)
5. ***PROGRAM*** (activity_id, name_of_program, startdate, enddate, vol_head_name, budget)
6. ***DONOR*** (ngo_id, donor_id, name, contact_no, mode_of_donation)
7. ***TRUSTEE*** (trustee_id, name, contact_no)
8. ***JOBVACANCY*** (ngo_id, post, location, salary)

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TABLES AND NORMALISATION

NGOINFO

Ngo_id(A)	Name (B)	foundation(C)	Cause (D)	Headquater (E)	Website (F)
1	Akshay Patra Foundation	1992	Children Education	Banglore	akshaypatrafoundation.com
2	Buterfliees India	2002	Human Rights	New Delhi	buterflieesindia.com
3	Child In Need	1998	Children Education	Kolkata	childinneedlush.com
4	Help Age India	2002	Old Age	Assam	helpageindia.com
5	Wings Foundation	2007	Orphanage	Uttar Pradesh	wingsfoundation.com
6	Goonj	1995	Women Empowerment	Mumbai	goonj.com
7	Bhumi	1989	Environment and Animal	Chennai	bhumi.com
8	Cuddles	1997	Cancer	Mumbai	cuddles.com
9	Not Scars	2000	Rehabilitating Acid Attack	New Delhi	makelovenotscars.com
10	Sammaan Foundation	2001	Empowering Vulnerable Communities	Varanasi	sammaanfoundation.com

NGO TABLE

Normalisation

(*PK: A*

PRIME ATTRIBUTES: A, B, F

NON PRIME: C, D, E

FDs: A ⟶ ABCDEF , B ⟶ ABCDEF , F ⟶ ABCDEF)

1NF: Already present in 1NF.

2NF: As primary key is non composite (NGO_ID) so no partial dependency.

3NF: No transitive dependency.
(C⟶ D ,D ⟶ C, E⟶ C
C ⟶ E , D ⟶ E , E ⟶ D) (do not exist)

BCNF: No non prime ⟶ prime dependency.
(C ⟶ A,B,F and D ⟶ A,B,F and E ⟶ A,B,F)
(do not exist)
This relation is in BCNF.

VOLUNTEERHEAD

B_ID (A)	VOL_ID(B)	VOL_HEAD_NAME(C)	CONTACT NO. (D)
B1	V1	VENKATESH RAO	9867452387
B3	V2	HARSHAD MEHTA	9667352413
B5	V4	BHUVAN RAJ	9978686554
B6	V3	RIYA YADAV	9009197856
B7	V6	SHARAD BILARI	9888676424
B8	V5	HARSHAD MEHTA	9978412434
B10	V14	ALLU ARJUN	9696257474
B12	V12	SARTHAK SINGH	9628226781
B14	V10	RAJAT TYAGI	9807635564
B16	V3	RIYA YADAV	9009197856
B17	V4	DRUV SAXENA	9887600401
B18	V1	RAMAN PATEL	9900112030

VOLUNTEER HEAD TABLE

Normalisation

(*PK: B_ID (A)*
PRIME ATTRIBUTES: A
NON PRIME: B,C,D
FDs: A ⟶ ABCD,D ⟶ BC)

1NF: Already present in 1NF.

2NF: As primary key is non composite (B_ID)
so no partial dependency.

3NF: Transitive dependency. (D ⟶ BC)

DECOMPOSING TABLES:
R1 (A , D)
R2(D ,B , C)

BCNF: No non prime ⟶ prime dependency in R1 and R2

R1 and R2 relations are in BCNF.

DONOR

Ngo_ID (A)	donor_ID(B)	Name (C)	Contact_No (D)	mode of donation(E)
5	D1	Santosh kumar	9654869320	clothes
7	D1	Santosh kumar	9654869320	money
1	D2	Meena Kumari	9770650515	raw material
5	D3	Rajat Singh	9770365772	money
1	D3	Rajat Singh	9770365772	money
2	D4	Vivek Shah	7999969633	money
3	D5	Amruta Roy	7225068691	books
3	D6	Ashish Khatri	4512345461	money
8	D7	Muskan Verma	2698545345	medicine
9	D7	Muskan Verma	2698545345	medicine
4	D8	Kratika Agrawal	8989359464	food material
10	D9	Devansh Gupta	9827951310	money
5	D9	Devansh Gupta	9827951310	money
6	D10	Shivansh Sharma	7898654520	money

DONOR TABLE

Normalisation

(*PK: NGO_ID, DONOR_ID (AB)*
PRIME ATTRIBUTES: A,B
NON PRIME: C,D,E

FDs: AB⟶ ABCDE , B ⟶ CD , D ⟶ C)

1NF: Already present in 1NF.

2NF: B ⟶ CD partial dependency exist

DECOMPOSITION TABLE:
R1(A, B, E)
R2(B, C, D)

3NF: No transitive dependency in R1 and R2.

BCNF: No non prime ⟶ prime dependency in R1 and R2
R1 and R2 relations are in BCNF.

MANAGER

Manager_id (A)	Name (B)	Contact_No (C)	Mail (D)
M1	V.K. Gokak	97362548544	gokak@gmail.com
M2	Anika Yadav	95831574687	ani123@gmail.com
M3	Asima Chatterjee	91684138355	asima@gmail.com
M4	Alok Kumar	95876444410	alok@gmail.com
M5	Abhijeet Rajput	95866233001	rajput@gmail.com
M6	Vivian D'sena	93265478910	vivian@gmail.com
M7	Alok Kumar	87795655510	alo321@gmail.com
M8	Karthikeyan	93123654720	karthik@gmail.com
M9	Anika Yadav	96633221050	yadav@gmail.com
M10	Varnika Singh	99966632110	singh@gmail.com

MANAGER TABLE

Normalisation

(*PK: manager_id (A)*
PRIME ATTRIBUTES: A,D,C
NON PRIME: B

FDs: A ⟶ ABCD , C⟶ ABCD , D ⟶ ABCD)

1NF: Already present in 1NF.
2NF: As primary key is non composite (MANAGER_ID) so no partial dependency.

3NF: No transitive dependency.
BCNF: No non prime ⟶ prime dependency.
(B⟶ ACD do not exist)
This relation is in BCNF.

BRANCHES

B_ID (A)	LOCATION (B)	NO. OF EMPLOYEES (C)
B1	KERELA	100
B2	MAHARASHTRA	140
B3	NOIDA	100
B4	HARYANA	200
B5	ASSAM	100
B6	PUNJAB	140
B7	NOIDA	180
B8	PATNA	100
B9	KANPUR	150
B10	MAHARASHTRA	140
B11	DELHI	100
B12	GWALIOR	200
B13	HYDERABAD	250
B14	GWALIOR	400
B15	GURGAON	300
B16	BAREILLY	150
B17	PATNA	300
B18	RANCHI	140

BRANCH TABLE

Normalisation

(*PK: B_id (A)*
PRIME ATTRIBUTES: A
NON PRIME: B,C
FDs: A ⟶ ABC)

1NF: Already present in 1NF.
2NF: As primary key is non composite (B_ID) so no partial dependency.
3NF: No transitive dependency.
(C ⟶ B , B ⟶ C do not exist)
BCNF: No non prime ⟶ prime dependency.
(B⟶ A and C ⟶ A do not exist)
This relation is in BCNF.

PROGRAM

ACTIVITY_ID(A)	NAME_OF_PROGRAM (B)	STARTDATE(C)	ENDDATE (D)	VOL_HEAD_NAME(E)	BUDGET (F)
A1	interactive wall painting	2020/04/19	2020/04/21	VENKATESH RAO	1,60,000
A2	human rights awareness	2020/04/24	2020/04/25	HARSHAD MEHTA	2,00,000
A3	child-friendly education content	2020/05/26	2020/05/29	BHUVAN RAJ	1,60,000
A4	cloth donation	06/09/2020	2020/06/11	RIYA YADAV	1,00,000
A5	yoga	2020/16/05	2020/06/17	SHARAD BILARI	1,00,000
A6	drawing competition	17/04/2020	2020/04/19	HARSHAD MEHTA	50,000
A7	home industry	2020/03/23	2020/03/25	ALLU ARJUN	2,00,000
A8	plant trees	2020/05/26	2020/07/15	SARTHAK SINGH	70,000
A9	tobacco awareness	05/01/2020	03/05/2020	RAJAT TYAGI	55,000
A10	psycological support	2020/10/28	2020/10/30	RIYA YADAV	50,000
A11	helping street vendors	2020/03/22	2020/03/25	DRUV SAXENA	1,00,000
A12	financial inclusion in cycle and cart pullers	2020/07/27	2020/07/29	RAMAN PATEL	1,50,000

PROGRAM TABLE

Normalisation

(*PK: A*
PRIME ATTRIBUTES: A,B
NON PRIME: C,D,E,F
FDs: A⟶ ABCDEF B ⟶ ABCDEF)

1NF: Already present in 1NF.

2NF: As primary key is non composite (MANAGER_ID) so no partial dependency.

3NF: No transitive dependency.

BCNF: No non prime ⟶ prime dependency. (C ⟶ AB do not exist)
This relation is in BCNF.

TRUSTEE

TRUSTEE_ID (A)	NAME (B)	CONTACT_NO (C)
T1	Ved prakash	9075685439
T2	Vikas Goswami	9775246891
T3	Ruchika Gujral	8512682567
T4	Jaideep Singh	9663587626
T5	Sanjay Joshi	8555678902
T6	Dinesh Tiwari	9657803686
T7	Amzad Khan	9056852498
T8	Rajendra Desai	8536168409
T9	Ved Parkash	7852690764
T10	Piyush Paul	9057789356
T11	Dinesh Tiwari	9657803686
T12	Keshav Verma	9635890156
T13	Anand Patel	7435789015
T14	Anuradha Sharma	8635497261
T15	Shantanu Malhotra	9753617890

TRUSTEE TABLE

Normalisation

(*PK: TRUSTEE_ID (A)*
PRIME ATTRIBUTES: A,C
NON PRIME: B
FDs: A ⟶ ABC)

1NF: Already present in 1NF.

2NF: As primary key is non composite (TRUSTEE_ID) so no partial dependency.

3NF: No transitive dependency.

BCNF: No non prime ⟶ prime dependency. (B ⟶ A and B ⟶ C do not exist) This relation is in BCNF.

JOB VACANCY

NGO_ID (A)	POST (B)	LOCATION (C)	SALARY (D)
1	communication executive	maharashtra	10000
1	program manager	Kerela	10,500
2	volunteer	Haryana	7000
3	facilitator	Assam	5500
4	manager	punjab	11000
4	executive assistant	noida	7800
5	communication executive	kanpur	9000
6	program manager	maharashtra	15000
6	management executive	Delhi	15000
9	manager	Bareilly	13000
10	volunteer head	Patna	8500

JOB VACANCY TABLE

Normalisation

(*PK: NGO_ID,POST (AB)*
PRIME ATTRIBUTES: A,B
NON PRIME: C,D
FDs: AB ⟶ ABCD)

1NF: Already present in 1NF.

2NF: A ⟶ CD and B ⟶ CD do not exist so in 2NF

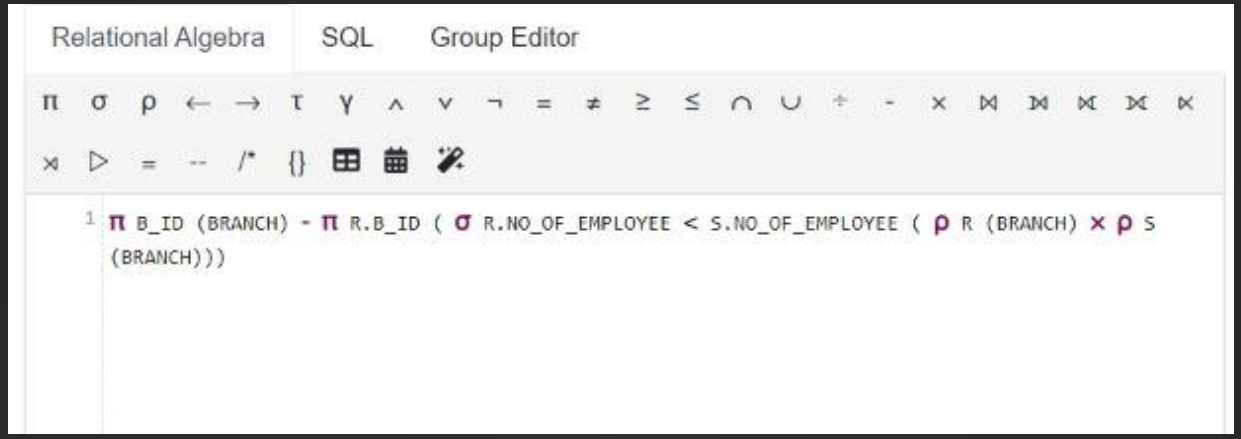
3NF: No transitive dependency.

BCNF: No non prime ⟶ prime Dependency.
This relation is in BCNF.

04

RA AND SQL QUERIES

Q1. Find the branch id of NGO with highest number of employee.



$$\pi_{B\_ID}(BRANCH) - \pi_{R.B\_ID}(\sigma_{R.NO\_OF\_EMPLOYEE < S.NO\_OF\_EMPLOYEE}(\rho_{R}(BRANCH) \times \rho_{S}(BRANCH)))$$

BRANCH.B_ID
'B14'

‹ 1 ›

SQL Statement:

```
select B_ID
from BRANCH
where NO_OF_EMPLOYEE = ( select max( NO_OF_EMPLOYEE) from BRANCH ) ;
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL »

Result:

Number of Records: 1

B_ID
B14

Q2. Name and foundation year of the oldest NGO.

Relational Algebra | SQL | Group Editor

```
1 π FOUNDATION ,NAME (NGOINFO) - π A.FOUNDATION , A.NAME (σ A.FOUNDATION >B.FOUNDATION ( ρ A
(NGOINFO) × ρ B (NGOINFO)))
```

NGOINFO.FOUNDATION	NGOINFO.NAME
1989	'Bhumi'

SQL Statement:

```
SELECT NAME,FOUNDATION FROM NGOINFO WHERE FOUNDATION = ( SELECT MIN(FOUNDATION) FROM NGOINFO ) ;
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL »

Result:

Number of Records: 1

NAME	FOUNDATION
Bhumi	1989

Q3. Find donor ID of donor who did not donate money at all .

Relational Algebra | SQL | Group Editor

```
1 (π donor_ID ( σ mode_of_donation ≠ 'money' (DONOR))) -
2 (π donor_ID ( σ mode_of_donation = 'money' (DONOR)))
3
```

DONOR.donor_ID
'D2'
'D5'
'D7'
'D8'

‹ 1 ›

SQL Statement:

```
select distinct donor_id
from DONOR
where mode_of_donation != 'money' and
donor_id not in ( select donor_id
                  from DONOR
                  where mode_of_donation = 'money' ) ;
```

Edit the SQL Statement, and click "Run SQL" to see the result.

Run SQL »

Result:

Number of Records: 4

donor_id
D2
D5
D7
D8

Q4. Find post and location which has salary between 5000 TO 10000.

Relational Algebra | SQL | Group Editor

```
π POST,LOCATION ( σ SALARY >= 5000 and SALARY <= 10000 (JOBVACANCY))
```

JOBVACANCY.POST	JOBVACANCY.LOCATION
'communication executive'	'maharashtra'
'volunteer'	'Haryana'
'facilitator'	'Assam'
'executive assistant'	'noida'
'communication executive'	'kanpur'
'volunteer head'	'Patna'

‹ 1 ›

Relational Algebra | SQL | Group Editor

select from where group having order limit

```
1 SELECT POST,LOCATION
2 FROM JOBVACANCY
3 WHERE SALARY>= 5000 AND SALARY<=10000;
```

JOBVACANCY.POST	JOBVACANCY.LOCATION
'communication executive'	'maharashtra'
'volunteer'	'Haryana'
'facilitator'	'Assam'
'executive assistant'	'noida'
'communication executive'	'kanpur'
'volunteer head'	'Patna'

‹ 1 ›

Q5. Find vol ids of volunteers who have worked for budget greater 150000.

Relational Algebra | SQL | Group Editor

```
1 π VOL_ID ( σ BUDGET >150000 ( VOLUNTEERHEAD ⋈ PROGRAM ))
```

VOLUNTEERHEAD.VOL_ID
'V1'
'V2'
'V4'
'V14'

‹ 1 ›

Relational Algebra | SQL | Group Editor

select from where group having order limit

```
1 SELECT VOL_ID
2 FROM VOLUNTEERHEAD
3 NATURAL JOIN PROGRAM
4 WHERE BUDGET > 150000;
```

VOLUNTEERHEAD.VOL_ID
'V1'
'V2'
'V4'
'V14'

‹ 1 ›

NGO DATABASE MANAGEMENT SYSTEM

TEAM MEMBERS (GROUP 3)

- HARSHITA AGRAWAL (2019IMT - 038)
- HARSHITA VERMA (2019IMT - 039)
- MAHIMA DEVI (2019IMT - 056)
- NEHAL (2019IMT - 066)
- PALLAVI RANI BHAKTA (2019IMT -71)
- SIYA (2019IMT -100)

Thank You