

R.V. COLLEGE OF ENGINEERING®

OBSERVATION / DATA SHEET

Date 17 Aug 2022 Name Sanskriti Agarwal
Dept./Lab DBMS Class MCA (B) Expt./No. 03

Title Energy Sector Database.

India is a leading country in producing Renewable Solar Energy. There are two types of solar panels available in Indian Market Namely Monocrystalline and Polycrystalline Solar Panel which are installed on the roof. Both the type of panel is available for domestic and commercial usage. The installation charges for Monocrystalline panels are around 40,000 and polycrystalline panels are around 60,000. The warranty of monocrystalline and polycrystalline is 15 yrs and 25 yrs respectively from the date of installation. Each panel is identified by a unique photovoltaic module (PV Module). These panels are installed for both Domestic (houses) and Commercial (offices, hotels etc.) usage. The installations are done by authorized vendors who also are the distributors of the panels. Vendors or distributors are identified by their unique TIN Number, name, address, contact details. The users are identified by their house/ office no., address. The capacity of the panels depends on the number of members in the installed place. So, there can be multiple installation of Panels from different vendors in the same place.

Signature of
Teacher incharge

- (1) Identify the entity, relationship, cardinality, participation and attributes.
- (2) Design the ER diagrams and map it to schema diagram
- (3) Create the tables and populate them with the data.

Attribute

Entity

SOLAR_PANEL,
VENDOR.

USER

capacity
PVNo., Type, Charge, Warranty, Usage, Cap.
TIN-No, Name, Address, Ph-no.

PV-No

PV-Type

INSTALL

PURCHASED BY

SOLD BY

Date

VENDOR

Ph.No.

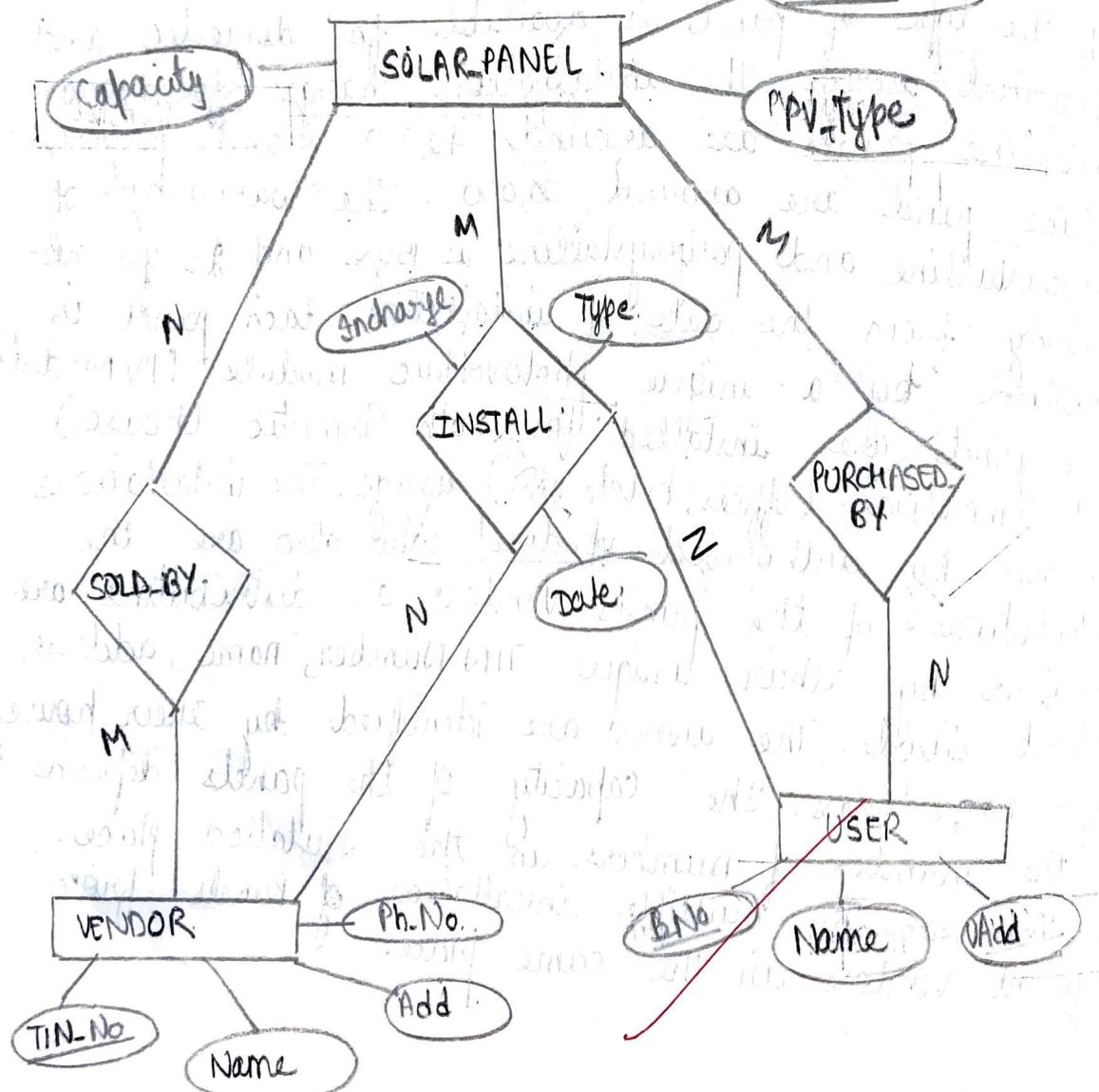
TIN-No

Name

Add

Name

Add



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Title
SOLAR PANEL.

PV No.	PV-Type	Capacity	Price
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VENDOR

TIN-No	Name	Address
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USER

B-No	Name	Address
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SOLD_BY

PV-No	Tin-No
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INSTALL

PV_No	Tin_No	B_No	Incharge	Date	Type
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PURCHASED_BY

PV-No	B-No
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*Proceed
Sheet
Name*

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Create table User (BNo. varchar(10) PRIMARY KEY ,
UName varchar(20) , UAdd varchar(20));

Create table SOLAR-PANEL (PV-No. varchar(10) PRIMARY KEY
PV-Type. varchar(10) , cap int(10) , Incharge ext bigint
);

Create table vendor (Tin-No. varchar(10) PRIMARY KEY ,
VNamee varchar(20) , VAdd varchar(20));

Create table sells (PK-No. varchar(10) , Tin-No varchar(10)
Primary Key (PV-No, Tin-No) , Foreign Key (PV-No). References
SOLAR-PANEL (PV-No) , Foreign Key (Tin-No). References.
Vendor (Tin-No) , Quantity int(20));

Create table PurchasedBy (PV-No varchar(10) , B-No.
varchar(10) , Primary Key (PV-No, BNo) , Foreign Key (PV-No). References
SOLAR-PANEL (PV-No) , Foreign Key (B-No). References
User (BNo));

Create table Installs (Tin-No. varchar(10) , PV-No varchar(10)
BNo varchar(10) , Primary Key (Tin-No, PV-No, B-No.) ,
Foreign Key (Tin-No). References Vendor (Tin-No) ,
Foreign Key (PV-No) References SOLAR-PANEL (PV-No),
Foreign Key (B-No) References User (BNo) , Idate
date , charge big int (30000) , ITYPE varchar(20)

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Class MCA 2(B) Expt./No. 03

Title _____

SOLAR PANEL.

PV No.	PV Type	Cap	Incharge
p01	mono	25	25000
p02	poly	10	28000
p03	mono	18	10000
p04	poly mono	20	15000
p05	poly	16	15000

VENDOR

Tin No	VName	VAdd
to1	Sankar	Jhansi
to2	Anuj	Jhansi
to3	Ankit	Jhansi
to4	Shubham	Gwalior
to5	Raghav	Gwalior

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USER

BNo.	UName	UAdd.
b01	Pooni	Jhansi
b02	Disha	Gwalior
b03	Shehil	Jhansi
b04	Ayushi	Bangalore.
b05	Simean	Jhansi.

SELLS.

PV_No	Tin_No.	Quantity
t01	p01	5
t01	p02	2
t01	p04	1
t02	p02	4
t03	p02	4
t04.	p03.	3.

PURCHASED_BY

PV_No.	BNo.
p01	b01
p02	b01
p02	b02
p02	b03
p02	b05
p03	b02
p03	b05
p04	b05

INSTALLS

TinNo.	PV_No	BNo	IDate	Charge	IType
t01	p01	b01	30-08-2022	20000	domestic
t01	p02	b01	19-07-2022	24000	domestic
t02	p02	b02	04-12-2020	26000	domestic
t02	p02	b05	27-12-2020	20000	commercial
t02	p03	b01	19-02-2021	24000	commercial
t02	p03	b03	24-12-2022	23000	commercial

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Date 17 Aug 2022 Name Sanskriti Agarwal
Dept./Lab DBMS Class MCA(B) Expt./No. 036

Title Energy Sector Database.

queries:

- 1) list the distributor with most installations in domestic places.
- 2) list the place name with highest capacity panel installed.
- 3) display the area where monocrystalline panels are installed.
- 4) for the specific area display the total installation charges for both type of PV modules.
- 5) list the details of distributor and panel that is the oldest installation.
- 6) find the average sales of both type of panels in only commercial places.

<u>UADD</u>
<u>JHANSI</u>

Signature of
Teacher incharge

Q3] SELECT U.UADD FROM USER U, INSTALS I, PANEL P
 WHERE U.BNO = I.BNO AND P.PVNO = I.PVNO AND
 P.PVTYPE = 'MONO';

UADD
JHANSI
JHANSI

Q5] SELECT V.* FROM VENDOR V, INSTALS I, PANEL P
 WHERE P.PVNO = I.PVNO AND V.TNO = I.TNO AND
 I.DATE = (SELECT MIN(DATE) FROM INSTALS I);

TNO	VNAME	VRADD
TO2	ANUJ	JHANSI

Q1] SELECT V.VNAME, COUNT(V.TNO) FROM VENDOR V,
 INSTALS I, WHERE V.TNO = I.TNO AND I.ITYPE =
 'DOMESTIC' GROUP BY V.VNAME HAVING COUNT(V.TNO) \geq
 (SELECT MAX(Z) FROM (SELECT COUNT(V.TNO) AS Z FROM

VNAME	COUNT(V.TNO)
SANSKAR	2.

Q4] SELECT U.UADD AS ADDRESS, SUM(I.CHARGE) AS TOTAL
 FROM USER U, INSTALS I, PANEL P WHERE U.BNO = I.BNO
 AND P.PVNO = I.PVNO AND P.PVTYPE = 'POLY' AND
 EXISTS (SELECT U.UADD FROM USER U, INSTALS I,
 PANEL P WHERE U.BNO = I.BNO AND P.PVTYPE = 'MONO')
 GROUP BY U.UADD;

R.V. COLLEGE OF ENGINEERING®

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Date 17/08/2022

Name Samkrati Agarwal

Dept./Lab DBMS

Class MCA 1st year Expt./No. 3(b)

Title _____

AVERAGE
170.0000
200.0000

[Q6] SELECT AVG(I.CHARGE) AS AVERAGE FROM USER U,
PANEL P, INSTALLS I WHERE I.PVNO = P.PVNO AND
I.ITYPE = "COMMERCIAL GROUP" BY I.CHARGE HAVING
AVG(I.CHARGE);

ADDRESS	TOTAL
Gwalior	190
JHANSI	350

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Teacher incharge

Select P.PVTYPE, SUM(I.CHARGE) / (SELECT count(*)
 From INSTALLS I where I.TYPE = 'commercial')
 From SOLAR ^{PANEL} I, INSTALLS I. where I.PVNO = P.PVNO,
 and I.TYPE = "commercial", group by P.PVTYPE;

	CHARGE
	0000.00
	0650.00%

SELECT I.PVTYPE FROM PVTYPE I
 WHERE I.PVNO = 0000 GROUP BY I.PVTYPE;
 SELECT I.CHARGE FROM INSTALLS I
 WHERE I.PVNO = 0000 GROUP BY I.CHARGE;

PVTYPE	CHARGE
SPI	23380.00
OPT	0.00