10th Jam. 2012 Monday.



## Unit - 4.

## Advanced SQL.

\* Relational set operators.

SQL provides following relational set

1.) UNION

2) UNION ALL

3.) INTERSECT

4) MINUS

J. UNION.

The UNION statement combines rows from two or more queries without including duplicate rows.

of two selected SELECT queries.

The SFIECT statement must be union compatible which means that the number of attributes must be same with their data types also.

Symtax:

query UNION query;

OR

SELECT columname FROM table 1

UNION

SELECT rolumnmame FROM tables;



	1								Date
								C	Page
	e.9	. ,				The second			
	select * from STU								
		iom							
	Sel	ect	*	1	norm S	TU1;			
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		mame			TUI name		sid	andom e	1000
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	2	В	mion	4	D	-=>	2		CLCPL
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							5	Eur	09-(41-
2.	1100	Th . /	A 1 1						
2.	TL.	LON	HLI	A .	ALI	a <del>+</del> 1 .		1	THE PERSON
+	The UNION ALL statement combines								
	1000	110100		- 111/	Olio scho				
tutor	The UNION ALL operator must be								
	Unio	m	100	mpa	tible	which	2	neame	Hout
200	both the tables must have same								
hethological	columns as well as data types.								
	Symtax:								
	Dym	'ax:	1.10	TOT	N ALI	340	-	otal co	pin de l
	740	4	Oli	101	V ALL	que	ry;	index in the same	100
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					Carried Street	000	OPER TO	- February	
	SELI	ECT	C	olun	mmmar	me	FROM	n 4-11	2733

SELECT columname FROM tables;

UNION ALL



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1	union	all			TARREST
	select	*	forem	STU1;	tanks.

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	sid	name		sid	mame	5 Samatana	sid	mame	
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	3	C		5	E	in 3	3	C	
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						-01	4	D	
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3. INTERSECT.

The INTERSECT operator can be used to combine nows from two queries returning only the nows that appear in both tables.

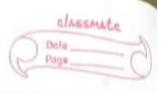
Syntax: -

query INTERSECT query;

SELECT columname FROM table I

INTERSECT

SELECT columnmame FROM tables;



e.g.,			
select	*	from	STU
INTER	SEC	T	
select	*	form	STUI;

5.	TU		S	TUI		0.0	
sid	name	K	sid	name		sid	mame
1	A	E	3	Ec	25	3	C
2	B	E	4	D	1101	B	
3	C	A	5	E		3.4	

4. MINUS.

The MINUS statement in SQL combines on us from two queries and returns only the nows that appear in livest table but not in the second.

Symtax:query MINUS query;

OR

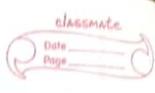
SELECT columnaame FROM table?
MINUS
SELECT columnaame FROM table?

e.g.,

select \* from STU select \* from STU1;



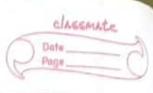
	Page
*	SQL functions.
	Transference O. Detrophico capability of anti-facility
7.	Numeric functions.
3	SQL provides tollowing numeric
	tunctions:
	1.) ABS
	2.) ROUND
	3.) CEILING
	4.) FLOOR
	0.00
_1)	ABS
	It returns absolute value of the
	specified number.
	Syntax:-
	ABS (numeric-value)
	ATTENDED TO THE PARTY OF THE PA
	e.g.,
	Select -1.93, ABS (-1.93) from Dual;
	-tkot-u2
	Output:
	-1.93 ABS (-1.93)
	-1.93 1.93
1)	Course
2	ROUND.
	It rounds a value to a specified precision
	Parcision.
	Syntax:-
	ROUND (numeric-value, P)
	Where Pe Precision



	C rade
	Ro ROUND 2.34 with 1,0 precision.
	select mound (2.34, 2), mound (2.34,0) from dual;
	Output:
	e.g., Display price of product with 2 decimal places.
	select mound (* (price, x) from product;
3.)	CEILING.  It returns smallest integer greater  than or equal to a number.  Syntax:-  (EIL (numeric-value);
	eg., select ceil (2.3) as ceil value from dual;
	Output:-  ceil(x.3)  *3
	Commence Commence Commence (C)
	Americal and the state of the s



	Date Page
4.)	FLOOR.
	It returns meanest largest integer less than or equal to a number.
	Syntax:- FLOOR (mumeric-value)
	e.g., SELECT floor (2.3) as floor value from
	Jual;
	Output: - floor (2.3)
2.	
2/	String functions.  SOL provides following string function:
	1.) Concatenation (11) 2.) UPPER & LOWER
	4.) SUBSTR
1	Concatemation (11) It combines data from two different character columns and returns single column.
	Syntax: - str-value 2   str-value 2;



	Page
	e.g., List id and name of students in a single column.
	select sid l'mame from student;
	OR
100	select sid 11', 'Il name from student;
	Output:
	1, A 2, B
	3, 0
	UPPER & LOWER.  The UPPER function returns a string in capital letters.  Syntax:- UPPER (str-value);
	e.g., List all students mame in capital letters. select upper (mame) from student;
	Sudadante II Caultanante

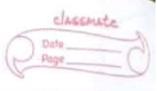


	The LOWER function neturns string in
	lower case letters.
	The state of the s
	Symtax:-
	LOWER (str-value);
	LOTAL GOMESTIC TABLES TO
	e.g.,
	Elist all students name in lower
	case letters.
	select lower (mame) from student;
	- Santian Sheataris
3.)	LENGTH.
-1	It returns the number of characters
	in a string value.
-	
	Symtaxi
	LENGTH (star-value);
	ASSET OF
	Display name and its length of all
	students.
	select name, length (mame) from student;
	SCIECE CHAMME, ICHISTON
4.)	SUB ST R.
	SUBSTR returns a sub string or a
	part of a string of a given
	string value.
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	when it will be to the same and the same and
	When the to the work to the test of the second of the seco
	and the television of the second

	Date Prige C
	Symtax:-
	Su
	SUBSTR Cstr-value, p, L);
	Where
-	p = start position L = length of characters.
-	L= length of characters.
-	manufer of manufer students to the best
-	e.g.,
-	Display first 3 characters of
-	student's mame.
200	select mame, substr (mame, 1, 3) from student;
	sitting parties of ref.
	24th Jam. 2022
	Monday.
3.	Date / Time functions.
2	
	TO_CHAR.
/	It actuans a character string or
	a tormatted string from a date
think	value.
	Symtax:
-	TO-CHAR (date-value, fmt)
0	where fint (toronat) can be
	MONTH - mame of the month
-	mon-3 letter of the month mame
	mm - 2 digit month name
	D- number for day of the week
	DD-number for day of the month
	DAY- mame of day of week



YYYY - 4 digit year value YY - & digit year value e.9 , Di Display year from student's date of hirth. select sid, dob, to-char (dob, 'yyyy') as year from student; Display students who born in 1997. select \* from student where dob = to-char (dob, (yyyy') = '1997'; 2) SYSDATE. It returns system's today's date. Symtax: SYSDATE P.9., Display current date of system.
select systate from ducil; 3) ADD\_MONTHS It adds a number of months or years to a date. Symtax: ADD-MONTHS (date-value, m) where n: number of month.



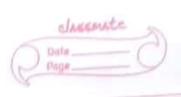
	e.g., Add 2 years in student's date of birth. and rename column as years added. select sid, smame, dob, add-months (dob, ev) as years-added from student;  LAST-DAY It returns the last day of the given month in a date. Syntax: LAST-DAY (date-value)
5.)	Display last day of the month from student's date of birth.  select sname, dab, last-day (deb) from student;  TO_DATE  It returns a date value using a character string and date format mask.  Symtax:  TO_DATE (char-value, fmt)  where fmt can be month name of the month name mn-2 digit month name  D-number for day of the week
	DD-number for day of the month



	Page
	DAY-name of day of week YYYY- 4 digit year value
	YY- 2 digit year value
	NOTE: - 'II/25/2012' is a text string,
	A CONTRACT OF THE PARTY OF THE
4.	Conversion function.
	To_CHAR  It returns a character string from numeric value.  Symtax:  To_CHAR (numeric-value, fmt)
	Display student name and mark of the student with the format 99.99 select smame, mark, to-char (marks, '99.99') from student;
2.)	To_(HAR.  It returns a character string from a date value.  Syntax: To_(HAR (date-value, fmt))



Display date of birth in yyyy/mm/dd E.9.3 student. select sid, sname, dob, to-char (dob, 'yyyy/mm/dd') from student; 3.) TO\_NUMBER. - It returns a formatted number from a character string. Symtax: To-NUMBER (char-value, fm+) where formats 9- displays a digit 0- displays leading zero - displays comma - displays decimal point - displays dollar sign B - displays leading blank 5 - leading sigm mI - parailing - (mimus) sign \* Oracle sequences. Oracle does not support AutoNumber datatype or the identity column property. we can use a sequence to assign values to a column in a table.



$\rightarrow$	Properties: It is not a data type. It is dependent
	shiest im database.
	Sequences have a name and can be used anywhere a value is expected.
	Sequences are not tied to a labe
	It generate a numeric value that
	any table. Sequence can be created and deleted
	any time.
	Syntax: SEQUENCE Pame [START WITH n]
	CINCREMENT BY MJ [CACHE / NOCACHE];
tan.	where
	Name - mame of the sequence Start with - specifies imitial sequence value (default 1)
	Incomment by - determines value by
	Cache or Nocache-indicates whether
	numbers in memory
	Cdefault 20)

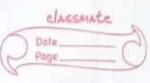
John Jam. 2022 Tuesday.



To view corated sequence, select \* from USER-SEQUENCES; To use sequence during data entry, two keywords are used: · NEXTUAL - retrieves mext available number. · CURRUAL - retrieves the current value of sequence To insert data in a table using sequence, following symtax is used, INSERT INTO tablemame VALUES (sequences\_name. NEXTUAL, 'valuer'); 2.9.3 Create a sequence demo-seq that starts with IOI and increment by 2. Insert data into demo table using this sequence. Create table demo did number (3), dmame varchard (10)): insert into doemo values (demo- seg. mextual, 'A');



	Monday.
*	SQL joint operator.
	The relational join operator merges
	rows from two tables and returns
	the row with one of the following
	eonditions:
	· Have common values in common
	column [Natural join]
	· Meet a given join condition [Immer
	joim]
	· Have common values in common
	columns or have no matching values
	[Outer join]
->	Types of join.
	Join
5.5	many policy course transport to the territory
	Cross Inner Outer
	join join - Left outer
	- Using clause - Right outers
	- On clause - Full outer
	iom was a series of the series
Defining	The immer join is a treaditional join
	in which only rows that meet a
	given criteria are selected.
	An outer join meturns met
	An outer join actuans not only the mouthing arows but the rows with
	ummatched value from both tables.
	all tables.



				Option III			Page_	
- 2	A E Ca	Coross join performs relational PRODUCT [Cartesian PRODUCT] of two tables.						
	Syn	tax!-				100	and Hibrers	
	SEL	ECT	ummli	st fr	rom 1	abla	oI, tables	;
100	lond I	I wilde					- FORE	
200	SELECT columnlist FRom table 1 (Ross JOIN tabled;							
	select * from student, course;							
	OR							
- 01	selec	·+ ·+ ·	from	studem	t cros	, ,	join roun	cse;
4		01.1		Person.		^	orini .	
- mother	sid	Stud		-	11 - Ci	art and a second	cname	
South	of t	A	11	mala w	3- 1		BCA	
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	.0%	last alt		trob to	oles ?	had	2 harmone	



		student.	tourse.	1.40
sid	mame	c7d	id	(mame
1	A	- 11	Mazaer	BCA
1	A	11	12	Blom
1	A	11	13	BBA
d	В	t i	II.	BCA
1	В	11	14	Brom
2	В	11	13	BBA
3	(	13		BCA
3	C	14	- 12	Brom
3	C	12	13	BBA

A matural join returns all nows with matching values in the matching columns and eliminates duplicate columns.

It performs following 3 steps:

1) Perform PRODUCT which displays contesian PRODUCT of two tables.

2) Perform SELECT which displays only the rows whith common values

in the common column.

3) Perform PROJECT which eliminates duplinate column.

Symtax:-

SELECT columnlist FRom table I NATURAL JOIN table 2;

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Date
Page

e.g.,			Total Section		
select	*	form	student	matural	join
(0	วนจ	se;	1 11 7		and the

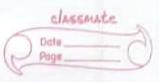
	137	Stude	emt .	14	Course			
	sid	name	rid		cid	cmame		
	laas	A	E-11		11.8	BCA		
1	2	ß	- 11		13	Brom		
I	3	(	111		13	BBA		

Step-1:	Pert	Perform PRODUCT.						
	H. A.		student.	course.	o' lawy	or No.		
J+16	sid	mame	cid	cid	(mame	An		
- multi	-1 -	A	TI -	all of all	BCA	070		
	1	A	and Hallana	12	Brom	odo		
	1	A	Harasi	13	BBA	FIN		
	2	В	. 11	TO 110	BCA	Colo		
1200	2	в	· 11	19712 00	Brom			
Short	2	8	a timble	13	BBA	Est		
	3	C	14	A 1 - 261	BCA			
	3	C	12	12	Brom	local little		
	3	C	10-12 TO	3 13 9	BBA	(SE		
					4 4 4 4			

Pen hon		student.	course.	- xoton
sid	mame	and bis	cid	cname
1	ALSI	S U MIC	E HIAAI	BCA
2	в	T1	1)	BCA
3	C	12	12	Brom



40-3:	Per for	m PROJ	ECT.		2 - k-93 ( - m.k.)
LATE OF	sid	mame	cid	course	-47441421
1	Long	A		BCA	1- Innerton III
	~	В	- 11	BCA	
	3	C	12	Brom	
100	Azerta		Tort of the	- mornal	
3.	Join	USINCE	CLAU	SE.	Toron Little Co.
-	I+ 8	eturns	omly	the mo	es with
	matchi	mg val	ies i	n the	matching
	column	1.		Lin a	100 No. 112
	Ave			24	
	Symtax	- 1			
	SELEC	T colum	malist	FROM to	ble I JOIN
	table	2 USI	NG (co	mmon - co	umm);
	- miono	Chertisan N	Daniel Co.	BOWN DOWN	L. Display
		19			10.5
	Join It a	ON ( returns the	LAUSE. only specifie	the m	ows that condition.



					Page			
	Synta	O X L C		CAPTER!	Tour Parence	L.E. DH		
	CELE	CT col	ummlist	FROM	table I J	OIN		
	dal	led MA	table 1. 1	alumm = T	dbled col	Imm:		
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	e.g.,		Carlle L					
		* 1	om stude	mt inim	10 yrse	om		
			= course.			1.5		
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	sid	name	cid	cid	chame			
		A	(1	11	BCA			
0	2	В	11	l)	BCA			
	3	Color	manter for	12	Brom			
	1 20	Secretary of	an coffee and	ANT DEL	- deliber			
	select		me, come mt. cid = co			ourse		
5×.			ne, mark nt.			of		
	select name, marks, chame from							
	student, course							
	where gemder = 'm' and student.cid =							
			e balls	cou	rse. cid;			
		Alpha.		- Tomb?	20 1 75	0		
ξ×.	Display	Display sid, name, marks, dob, chame of students who born in April month.						
	STUGEN	113 6010	00	mpa II e	mann.			
		THE R	40 1 400		L 75.			
			EL DOE D	T and				



5. Left outer join
The left outer join displays all the rows of first table and matching as well as not matching values of the another table.

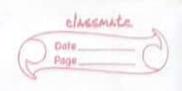
Symtax:

SELECT columnlist FROM table I LEFT OUTER JOIN tabled ON table I. column = tabled column;

select \* from student left outer join course on student cid = course cid;

sid	mame	cid	conceme	100
oneb	A	-0	BCA	
2	B	11	BCA	
3	C		2014	40

6. Right outer join.
The right outer join displays all the rows of second table including rows that do not have matching value in the first table.



Syntax:			neled	- 41	dries of	en a Village
SELECT		list	FR	om	tableI	RIGHT
DUTER	JOIN	table	2	ON	4-7-3	(1) 1100
table ]	column=	10161	ed.	colur	mmj	0.6

attention and and

e.g., select \* from student right outer join course on student cid = course cid;

sid	name	cid	concerne
1	A	11	BCA
and the same	chilt or	12	Brom
all maries as	SHILLIA	13	BBA
2	B	-11	BCA

7. Full outer join.
The full outer join returns matching and not matching values from both tables.

It is combination of left and right

outer join.

Symtax: SELECT columnlist FROM table 1 full FULL OUTER JOIN tobler ON table 1. column = table 2. column;

e.9., select & from student full outer join rourse on student. cid = course. cid;



sid	mame	cid	Coname
وورا المتواني	θ	The There	BCA
Section 1	windows.	112	Blom
lan I	make mark	13 1	BBA
~2	В	- 11	BCA
3	C		

Tuesday

\* Sub queries and co-related queries.

1. WHERE SUB query.

The most common type of subquery uses the immer SELECT sub query on the right side of WHERE expression

Symtax:

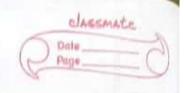
SELECT columnaame FROM tablemanne WHERE (subquery);

e.g., matter trained and amount of the

Display sid, smame, dob of students whose marks are greater than the average marks.

select sid, mame, dob from student where marks > (select aug (marks) from student);

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IN sub query.

If we want to display multiple values based on the specified value from a table them the special operator IN is used.

SELECT columnaame FROM tablemame WHERE columnaame IN C'value1', 'value2',...)

List students whose mame either start with letter A or ends with letter A using subquery.

select \* from student where mame like 'Ay.' or name like 'Y.a';

select \* from student
where name in (select name from
student where name like 'A'.' or
name like 'a'.');

3. Multi now sub query operators - ANY, ALL.

The use of ALL operator allows to compare a single value with a list of values neturn by first sub query using a comparison operator other than equal.



	Page
10	the ANY operator allows user to compare a single value to a list of values and select only the rows
	which fulfill the given condition.  Attribute list sub queries.
- James	The attribute list ram include a sub query expression which is called inline sub query.
	A sub query in the attribute list must return one value.
	select sid, smarme, (select max (marks) from student) as maximum from student;
	and the transfer to a the side of the second
	2116 MALMU & MATMAT  Transitional polyments on close \$1.2  There is Timed Piles and Pi
	Leaves thrown south and the property

Ja ( 2	Strong rough to the total and the state of t
	Unit-4.
J. I.	What is sequence? Explain it with
	example.
2.	Explain SQL join in detail.
3.	Explain different relational set operators.
4.	What is the difference between
J18	UNION & UNION ALLS
5.	Explain following functions:
112	Date & Time, String, Numeric,
	Conversation.
6.	Explain multi now sub query
	operations.
	THE RESIDENCE THE PROPERTY OF THE PARTY OF T